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Editorial

Psychoeconomics – The Upcoming Role of Mental Health Professionals

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Psychoeconomics is a field that uses techniques from psychology and economics.[1] It is also called *behavioral finance.*

A number of studies on UK based students have shown that mental health problems are linked to financial problems,[2] level of debt[3] and concern about finances.[4] Government surveys in UK found that 1 in 11 people report debt or arrears but in individuals with mental health problems,[5] this figure increases to 1 in 4. Greater financial difficulties predicted greater depression and stress.[6] Anxiety and alcohol dependence also predicted worsening financial situation suggesting a bi-directional relationship.[6] Around 9% of people without mental health problems reported debt or arrears, whereas 24% of individuals with neurotic conditions and 33% of those with psychotic conditions were in debt.[5] 37% patients assessed after an act of self-poisoning were in debt[7] and the difficulties in repaying debts is an independent predictor of suicidal ideation.[8] The other important factors include the onset of mental illness, greater spending as a result of a condition (e.g. mania and spending sprees), communication difficulties and compulsive shopping disorder.[9] It has been found that self-reported anxiety increases with the ratio of credit card debt to personal income.[10] The financial difficulties are associated with the development of postnatal depression[11] and also, depression among men.[12] The impact of debt on relationships results in isolation and social exclusion causing a strain on existing relationships.[13]

The patients' debt is rarely discussed in the psychiatric literature.[13] The psychiatrists have a role in debt crisis, proactively looking for signs that patients could be at risk of debt; raising and discussing debt during routine assessments; effectively referring individuals for specialist debt counselling and monitoring progress; and also assessing whether patients have sufficient mental capacity (i.e. *financial capacity*) to manage their finances and if required, assigning control of finances to appointees and attorneys.[13]

Understanding the stages and mechanisms through which a manageable debt becomes a problem debt can help mental health professionals act before a full-blown crisis occurs. There is a *debt spiral*, which consists of missed payments and penalties; juggling finances; creditor pressure; financial breakdown; unrealistic arrangements; legal proceedings and finally, total loss.[13]

The psychiatrists can face difficult challenges when dealing with individuals who are accruing *problem debt* (i.e. falling behind with payments) or *priority debt* (resulting in loss of essential services or court action resulting in loss of liberty) but have either not yet been deemed 'incapable', or who do have capacity. Assessing mental capacity to make financial decisions is a big challenge as there is no standardized measure or procedure for assessing a patient's mental capacity to make financial decisions. One framework for the assessment of mental capacity to make financial decisions[13] is to: *Evaluate the extent of the person's property and affairs* (including an examination of income and capital; expenditure and liabilities; financial needs and responsibilities; whether the person's financial circumstances are likely to change in the foreseeable future; the skill, specialized knowledge and time it takes to manage the affairs properly and whether the mental disorder is affecting the management of the assets; whether the person would be likely to seek, understand and act on appropriate advice

where needed, in view of the complexity of the affairs); *Personal information*, which might include age, psychiatric history, prospects of recovery or deterioration, the extent to which any in capacity could fluctuate, family background, family and social responsibilities, cultural or religious considerations; the degree of existing or expected support); and T*he person's vulnerability* (Could the person's inability to manage their property and affairs lead them to make rashor irresponsible decisions?; Could inability to manage lead to exploitation by others – perhaps even by members of the person's family?; and Could inability to manage compromise or jeopardize the situation of other people?)

The challenges are likely to become more apparent for psychiatrists over the coming years. Firstly, it is probable that existing debt will continue to rise and will be carried by socially vulnerable groups. Secondly, the role of the psychiatrist in assessing financial capacityis likely to increase. Thirdly, the new guidelines or laws specifically focused on dealing with people with mental health problems who are in debt may come as in UK.

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Review Article

Body Image Dissatisfaction and its Psychological Outcomes: An Overview

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Body image refers to a person's emotional feelings, attitudes, beliefs and perception of their own body. It covers individual's physical characteristics and functional aspect along with the psychological and behavioral attitudes towards themselves.[1] "Body image is a mental picture formed from one's own physical characteristics and the functionality of these traits as being attractive or unattractive."[2] Individual could have positive or negative body image. Positive body image means accepting and feeling good about one's body and people with positive body image feel comfortable and confident with their body. On the other side people having negative body image show dissatisfaction with their appearance and feel ashamed, embarrassed and show lack of confidence in relation to their body.[3]

Development of body image starts at age 6 or earlier but in adolescent period individuals show more concern about their perception. Development of body image not only depends upon biological factors (i.e. height, weight, shape) but also socio-cultural factors like family environment, peer group, media. Individual body image would be positive or negative depending on their physical health, functionality, experiences and the culture he/she belongs to.[4] Studies conducted on Indian females show that body image is related with physical and psychological factors like BMI, self-esteem and body shape among female and also with social factors as mother's educational status, relation with relatives, and peer group opinion about their body.[5]

Perspectives on Body Image

In the development of body image socio-cultural factors play important role. **Socio-cultural perspective** is an approach to understand human behavior that focus on how cultural values influence individual values and behavior. Within the socio-cultural approach some theories define how appearance can affect others behavior toward oneself. Social expectancy theory argues that people behave differently toward attractive and unattractive individual and this differential behavior that affect their self concept and his or her way to respond. Implicit personality theory define that physical attractiveness is presumed to be linked with variety of attributes, the number and nature of which depend on culture. In applied sense attractive people are the recipients of all manner of positive behaviors and they appear to develop positive characteristics as a consequence.[6]

Psychoanalytic perspective recognizes the ego as first and foremost, the body ego, the more inclusive term "body self". Body self refers to a combination of the psychic experience of body sensation, body functioning and body image. Developing the capacity to reflect on our own experience and behavior as well as to conceive of others' feelings intents, desire, knowledge, beliefs and thinking leads to an integration of body self.[7] People who are unattained to their affective world may not have a way of understanding some of the affective world they experience; they may lack the representation of body self and psychological self that would allow them to integrate these emotions. Such individuals make their bodies the narrator of the words cannot say, of feeling they cannot tolerate in their conscious awareness and action language rather than verbalization. When the body cannot be naturally integrated into psychological experience, it remains in the foreground, accentuated by asceticism alienation (such as fasting or self-

mutilation), or by becoming the instrument of action symptoms (such as addictive use of substance).[8]

Body image is formed by person-environment transaction and occurs in the context of individual's physical development, cognitive and emotional state and social environment. Rapid physical changes during puberty can affect the body image development. According to **cognitive behavioral perspective,** specific situational cues or contextual events activate schema-driven processing of information about, and self-evaluations of one's physical appearance. Thus people whose schema are appearance driven place more importance on body, pay more attention to how they look and preferentially process information relevant to appearance.[9] Negative internal dialogue about one's appearance is habitual, faulty and dysphoric among individuals with problematic body image attitude and schemas. To manage their appearance and produce reinforcing self-evaluations, people do many purposeful actions. Management of one's appearance self-management is one class of self-regulating body image behaviors. For many individuals, everyday grooming provides favorable and reinforcing affective, cognitive and interpersonal consequences.[10]

Gender differences

There are many studies which reveal that women show more concern toward their body and also show more dissatisfaction with their body image in comparison to men .[11] Women are also less precise in estimating their real size and they show dissatisfaction with their body because they find themselves over weight.[12]

Because of some biological and societal differences between men and women the criteria for ideal body shape and perceived social pressure regarding body image is also different. Male's body dissatisfaction was predicted by pressure from peers to increase their muscles bulk, while for females pressure to lose weight from peers, adult relatives and media was likely to increase body dissatisfaction.[13] A study conducted in Chinese population with body image dissatisfaction revealed that 60 percent of male participant have body image dissatisfaction because they consider themselves underweight whereas 71 percent of females found themselves overweight and show body image dissatisfaction. Males were also found more concerned with muscularity Whereas ideal body for females was standardized as slim and toned features.[14,15] According to Goldberg, muscular thighs, large buttocks, narrow hips, a defined abdomen and prominent breasts are the new standards of new body image, which is hard to achieve and it may be the reason of body image dissatisfaction among females.[16] Males show less dissatisfaction with their appearance in comparison to females and the ideal body shape for male is also different from female's ideal body shape.

Media influences

Majority of research on appearance comparison has focused on comparison to media image through magazines, television, or music videos. Watching television as well as reading magazines have been associated with the internalization of appearance ideals.[17] Some magazines contain a disproportionate amount of content that focus on appearance and thus this type of magazine lead to more focus on body image.[18] Previous study presents that exposure to the ideal body images presented within magazines and television advertisements is related to body image concerns.[17] Internet appearance exposure is associated with weight dissatisfaction, drive for thinness and low self-esteem in both males and females. It has found to be related with drive for thinness and low self-esteem in both males and females within exhibited in regards to body-esteem.[19] Researchers have confirmed that the observed negative mood and body dissatisfaction is at least partially mediated by social comparison processing.[20]

Type of website and duration of use, social network also affect the degree of dissatisfaction with body and drive for thinness. The use of Google and you tube showed no association but the individuals who spend more time on social networking sites (e.g. facebook) report more dissatisfaction with their body and more drive for thinness and show more concern toward their body.[21] Carey, Donghue and Broderick suggest that appearance comparison of appearance with peer image have stronger association with body image concern than comparison to model or celebrities and it may be reason that facebook users show more concern toward their body than users of other social networking site.[22] Exposure to

celebrity and peer image on instagram increased negative mood and body dissatisfaction.[23]

Most of the studies indicated that body image perception and satisfaction or dissatisfaction with body is affected by media and social networking sites specially which have features of sharing pictures and photos. Factors like comparison of appearance with others in family, how much peers follow celebrity appearance and work for ideal body image mediates between body image perception and media influence.

Cultural influences

Body image is a subjective feeling develop from person's cognitive and emotional perceptions and evaluation of their body. Ideal body image consists of cultural ideals. Mikolajczyk et al indicated that African American students perceive themselves fat in comparison to non-Hispanic White and non-Hispanic boys even though they have same body mass index.[24] Being 'full-figured' is considered the ideal body size for women in Surinan, Antillon cultures and African cultures and in some non-western country curvaceous body is considered more beautiful than ultra-thin whereas in western country thin body is considered beautiful.[25,26] Hispanic girls are more likely to have poor body image and desire to thin body than white preadolescent girls. Hispanic boys prefer largerbody type as compared to white preadolescent boys.[27] Weight loss attempt were reported most often in Latino youth and least often in white youth.[28]

Socio-cultural form of influence include social pressure to conform to a particular body type, teasing and comparison with other idealized being one's family, friends and the media.[29] In a study by Ma (2008) it is found that anorexic mother could be responsible for causing and maintaining self-starvation in their female child and dysfunctional mother daughter relationship also predicted disordered eating in Chinese population.[30] In different culture or environment, perceived social pressure is also different as a study by Mellor et al found that in Chinese children living in Malaysia, body dissatisfaction was predicted by perceived pressure from family, and media, but not peers.[31] Literature shows that culture affects the body image in many ways but in the present time due to use of social networking and globalization of media, body ideal for specific culture may not followed by young population. A study by Rubin et al report no difference in eating pathology between US, France and India but discrepancy in body image has been found in Tibetans population.[32] So it could be speculated that ideal body image for today's youth does not depend only on the culture they belong, but rather on media exposure they have.[33]

Psychological outcomes of Body image dissatisfaction

With our environment these days, packed with input from many different sources, which information will be processed depends on many cognitive and emotional factors. Interpretation of the information is highly affected by individuals' perception. Body image perception is a mental image of body which is formed by how individual perceive his/herbody, which could be negative or positive. Positive body image includes body acceptance, body appreciation and adaptive appearance investment.[33] Many physical, emotional, environmental and social factors including family and peers also affect body image perception.[12] When there is discrepancy between ideal body size and current body size people show dissatisfaction which leads to many negative consequences.

Studies included in this paper have been searched through PubMed, Science Direct and Google Scholar using combination of the terms with body image as 'perspectives ', perception, 'ideal body standard', satisfaction/ dissatisfaction, 'sociocultural pressure', 'peer pressure' and 'media' 'gender influence', 'self-esteem', 'depression', eating disorder'. References of collected articles were also scanned for additional relevant studies. The studies related with outcomes of body image dissatisfaction have been documented in tabular form.

It is evident from the table that body image satisfaction is positively associated with self-esteem, sexual satisfaction and wellbeing, while it is negatively associated with depression.[37,40,42,43] Michels and Amenvah reported that body image dissatisfaction is associated with lower well being[43] and this could be the reason of negative emotions, low self-esteem, reduced happiness, low psychological functioning and low level of life satisfaction.[40,44-48] Body image also impacts social relations,

Table: Studies on psychological outcomes of body image dissatisfaction

Author	Year	Title	Measure	Major Findings
Jonstang[34]	2009	The effect of body dissatisfaction on eating disorder symptomatology: Mediating effects of depression and low self-esteem.	• BSS (Alsaker, 1992) • RSES (Rosenberg, 1965) • CES-D (Radloff, 1977) • EDE-Q (Fairburn & Cooper, 1993)	• Mediating effects of depression and self-esteem were found in predicting general eating disorder symptoms, including restraint eating. • Depression mediates the relationship between body dissatisfaction and bulimic symptoms.
Almedia et al[35]	2012	Body image and depressive symptoms in 13 year old adolescents	• BDI-II (Beck, 1996) • FRS (Stunkard et al., 1983)	• 56.2% of girls and 67% of boys showed dissatisfaction with their body. • Negative correlation between body image dissatisfaction and depressive symptoms.
Blashill & Wilhelm[36]	2013	Body image distortions, weight, and depression in adolescent boys: longitudinal trajectories into adulthood.	• CES-D (Radloff, 1977)	• Boys who viewed themselves as either very underweight or overweight reported significantly higher levels of depressive symptoms in comparison to boys with average weight.
Epperson et al[26]	2013	Associations among Body size, body image perceptions, and weight loss attempts among African American, Latino, and White Youth: A test of a mediational model.	• PA (Harter, 1998) • FRS (Collin, 1991)	• Larger body size and negative body perception were related to more reported weight loss attempts in White and Latino youth. • Body perception mediated the relationship between body size and weight loss attempts for white youth.
Jackson et al[37]	2014	Body image satisfaction and depression in midlife women: The study of women's health across the nation.	• CES-D (Radloff, 1977) • AFRS (Sorensen et al. 1983)	• Women with body image dissatisfaction or who perceive themselves unattractive report significant level of depressive symptoms.
Pop[38]	2016	Self-esteem and body image perception in a sample of university students.	• BMI • RSES (Rosenberg, 1989) • CDRS (Thompson & Gray, 1991)	• 79% of girls were unhappy with their physical appearance. • Negative Correlation between self-esteem and body image dissatisfaction.
Manaf et al.[39]	2016	The prevalance and inter-relationship of negative body image perception, depression and susceptibility to eating disorders among female medical undergraduate students.	• BI-AAQ (Sandoz et al. 2013) • EAT-26 (Garner. D.M., & Garfinkel, P.E. 1979)	• Positive relationship between depression and eating disorder • Negative relationship between body image and depression as well as between body image and eating disorder. • Depression was partially mediating the effect of body image on eating disorders.
Becker et al.40	2017	Body image in adult women: associations with health behaviours, quality of life, and functional impairment	• BSQ (Cooper et al., 1987) • BPSS-R (Petrie et al., 2002) • BAS (Avalos et al. 2005)	• Negative body image significantly correlated with poorer wellness behaviours & quality of life, negative affect, and functional impairment.

Table: (Contd...)

Author	Year	Title	Measure	Major Findings
			• PSQI (Buysse et al. 1989) • PANAS (Watson and Clark, 1999; Watson et al., 1988) • WHOQOL-BREF (Skevington et al. 2004)	
Ganesan et al.[41]	2018	Are body image issues affecting our adolescents? A cross-sectional study among college going adolescent girls.	• Semi-structured questionnaire was used.	• Higher BMI, socio-cultural pressure to be thin and depression were associated with body image dissatisfaction.
Lin & Lin42	2018	The study of body image, self-esteem and sexual satisfaction of college students in southern Taiwan	• MBSRQ (Cash, 2016) • RSES (Rosenberg, 1989) • SSI (Whitley, 1975)	• Body image was found positively correlated with self-esteem, and sexual satisfaction.

Note: BSS= Body Satisfaction Scale, RSES= Rosenberg Self-Esteem Scale, CES-D = Center for Epidemiologic Studies Depression, EDE-Q = Eating Disorder Examination Questionnaire, BDI = Beck Depression Inventory, PA = Physical Appearance, FRS = Figure Rating Scale, AFRS = Adult Figure Rating Scale, BI-AAQ = Body Image Acceptance and Action Questionnaire, EAT = Eating Attitude Test, BSQ= Body Shape Questionnaire, BPSS-R = Body Parts Satisfaction Scale-Revised, BAS = Body Appreciation Scale, PSQT = Pittusburgh Sleep Quality Index, IPAQ-SF = International Physical Activity Questionnaire-Short Form, PACES= Physical Activity Enjoyment Scale, PANAS= positive and negative affect schedule, WHOQOL= Word Health questionnaire Quality of Life scale.

daily activities, interpersonal communica-tion, and family relationship.[49] Although people who have positive feeling about themselves; body dissatisfaction has very little effect on other aspect of their life.[50]

Several studies revealed that body image and self-esteem has positive correlation. Body image dissatisfaction has more effect on females'self-esteem than males as they achieved their self-esteem through the attractiveness and beauty of their bodies, while males do that through authority and position.[51] In a study it is found that low self-esteem could be reason of dissatisfaction with body image and vice-versa.[52]

Withdrawn and isolated, make less efforts to interact with others and receive less social reinforcement also may be the consequence of negative body image.[53] Students with body image dissatisfaction show depressive symptoms, difficulty in making friends, suffer from family, social and emotional stress, dissatisfaction with the course and body mass index.[54] Relationship and academic performance were negatively affected by body image dissatisfaction.[55] A study by Holsen and Birkeland documented that quality of relationship with parents associated with level of their satisfaction with body.[56]

Body image and depression or depressive symptoms are linked with each other.[57] Body image dissatisfaction could be a risk factor for developing depressive symptoms and unhealthy weight control behavior.[27,58] Mediating factor between body image dissatisfaction and depression might be bullying or chronic stress.[59] Salafia and Gondoli observed in their study that body image dissatisfaction in adolescence may lead to later depressive symptoms among female adolescents.[60] Patient of body dysmorphic disorder report suicidal ideation and due to their physical concern they are at risk for suicide attempts.[61] Risk of developing depressive symptoms among girls, dissatisfied with their bodies is higher than boys who are dissatisfied with their bodies.[62]

To achieve ideal body size people, start dieting, exercise and many more things but sometimes it leads to eating disorder. Body dissatisfaction in early adolescent leads to bulimic symptoms and dieting. Salafia and Gondoli has documented in their study that relationship between body dissatisfaction and disordered eating is the same across the gender, but

in several studies it is found that body dissatisfaction could be specific predictor of disordered eating in girls.[61] Manaf, Saravana and Zehrah concluded that depression is mediating factor between body image and eating disorder.[39] Whether depression leads to eating disorder or eating disorder leads to depression is not well defined because in many studies only relationship was examined between eating disorder and depression.[62] Other factors like personality, peer pressure and culture are also related with body image and eating disorder and could mediate between distorted body image and depression.[63]

Sexual relationship may also be affected by negative body image.[42] Dissatisfaction with appearance and excessive anxiety make individual shy and try to avoid physical exposure. It reduces sexual desire, sexual enjoyment and sexual performance. It was observed that individuals with higher body image satisfaction engage in a great variety of sexual activities, feel more sexually desirable and experience fewer sexual problems than those who have less satisfaction with their body.[64]

Conclusion

Above literature shows that factors like gender, media socio-cultural factors, peer relation, parental relation, gender role and societal beliefs play important role in body image perception, acceptance and satisfaction. Dissatisfaction with body image leads to low self-esteem, anxiety, depression, poor quality of life, dissatisfaction with life, problems in sexual relations and social relations. Most of the studies related with body image dissatisfaction have been carried out on adolescent population focusing on females. Huge number of adolescents was found dissatisfied with their body specially their weight though they have average body weight. Following needs have been identified through this review.

A. Culture specific measures of body image perception, acceptance and satisfaction are needed to study this concept. B. There is dearth of studies on predictors of positive body image and satisfaction. C. Longitudinal studies are required to study negative consequences of body image dissatisfaction and positive outcomes of body image satisfaction. D. Working on predictors of negative body image and dissatisfaction may lead to more effective intervention programs that can reduce its negative consequences.

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Review Article

Empowering Children - Age Appropriate Sex Education

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Introduction

Child sexual abuse (CSA) is largely an unwitnessed and often undetected crime. WHO defines CSA as "the involvement of a child in sexual activity that he or she does not fully comprehend and is unable to give informed consent to, or for which the child is not developmentally prepared, or else that violate the laws or social taboos of society."[1] The term CSA includes a range of activities like "intercourse, attempted intercourse, oral-genital contact, fondling of genitals directly or through clothing, exhibitionism or exposing children to adult sexual activity or pornography, and the use of the child for prostitution or pornography." A survey by UNICEF conducted in India from 2005 to 2013 reported that 10% of Indian girls might have experienced sexual violence when they were 10–14 years of age and 30% during 15–19 years of age.[2] Overall, nearly 42% of Indian girls have gone through the trauma of sexual violence before their teenage. A study was conducted in 2007 by Ministry of women and child development in India covering 13 states. The study reported that about 21% of the participants were exposed to extreme forms of sexual abuse.[1]

Research suggests that most cases of child sexual abuse are never disclosed to authorities. The consequences of CSA are both psychological as well as physical, short term as well as long term.

Certain alarming facts about CSA are[1,3–5]

1. Children of all ages races, ethnicities, cultures, and economic backgrounds are vulnerable to sexual abuse.
2. Child sexual abuse occurs in rural, urban and suburban areas.
3. Child sex abuse affects both girls and boys in all kinds of neighbourhoods and communities, and in all countries around the world.
4. Most child victims are abused by someone they know.
5. Children are most vulnerable to sexual abuse between the ages of 7-13.
6. Child sexual abuse involves coercion and can involve violence.
7. The consequences of child sexual abuse are wide ranging and varied.
8. Girls are more likely than boys to disclose child sexual abuse.
9. Child sexual abuse negatively and permanently affects the physical development of a child's brain.

The best strategy to treat victims of CSA is to prevent CSA.

Prevention of CSA[6–11]

Multiple strategies have been proposed by multiple sources. Government of various nations has been proactive in implementation of those considered to be effective. These can be grouped in the following manner:

Primary Strategies

1. **Offender management**
   - i. registering sex offenders
   - ii. notifying communities about their presence
   - iii. conducting background employment checks
   - iv. controlling where offenders can live
   - v. imposing longer prison sentences.
   - vi. counselling strategies for offenders

In theory, the fear of swift, certain, and serious

punishment will deter the abuse before it happens. This approach wins approval from both the public and policy makers. It is based on an overly stereotyped characterization of sexual abusers.

2. Educational programs

Primarily targeted at children (School Based), families, teachers, youth service workers, and others who may be in a position to intervene.

Goals :

a. Prevent abuse
b. Report on-going abuse – Harm Reduction
c. Mitigate the negative consequences of abuse

Delivery:

a. Schools: Most Effective
d. Religious Education Institutions
e. Youth Serving Organisations

Different Programs target different age groups.

3. Community Prevention

a. Spreading awareness and mutual lookout and help
b. Bullying prevention programs
c. Educating parents in tandem with their children - increase family communication and between groups of parents

Strong evidence of prevention through laws, policies, and fully-funded programs that focus on early identification of people at risk for committing child sexual abuse

Online Sexual Abuse

Children get majority of sexual education from other children and media sources. The information thus received is often wrong and discordant to the sexual values that parents want to convey to the child. Children witness explicit adult sexual activities which are sometimes found during "family time" shows, commercials, and on cartoon/children's channels.

Management

1. Controlling media exposure
2. Supervision
3. Providing appropriate alternatives becomes very important.

Keeping in mind the above issues, imparting sex education to the children becomes very important. That is the way we can empower them.

10 things to teach your child to prevent sexual abuse

1. ***Talk about body parts -***
   Feeling comfortable using these words and knowing what they mean can help a child talk clearly if something inappropriate has happened.
2. ***Some body parts are private:***
   Not for everyone to see.
   Mommy and daddy can see them naked
   People outside of the home should only see them with their clothes on.
   Doctors can see them without their clothes because mommy and daddy are there with them and the doctor is checking their body.
3. ***Teach your child body boundaries:***
   No one should touch their private parts no one should ask them to touch somebody else's private parts
4. ***Tell your child that body secrets are not okay:***
   Most perpetrators will tell the child to keep the abuse a secret they should always tell you if someone tries to make them keep a body secret
5. ***Tell your child that no one should take pictures of their private parts:*** often missed by parents
6. ***Teach your child how to get out of uncomfortable situations :*** Some children are uncomfortable with telling people "no" Tell them that it's okay to tell an adult they have to leave, if something that feels wrong is happening
7. ***Have a code word your children can use when they feel unsafe or want to be picked up :***
   Give them a code word that they can use when they are feeling unsafe.
   Can be used at home, when there are guests in the house or when they are on a play date or a sleepover.
8. Tell your children they will never be in trouble if they tell you a body secret
9. Tell your child that a body touch might tickle or feel good : ***"good touch and bad touch"***
10. Tell your child that these rules apply even

with people they know and even with another child

The basic premise: Knowledge is a powerful deterrent, especially with young children who are targeted due to their innocence and ignorance in this area.

Analysis of the Imparting education programmes.[5,9–17]

Most prevention programs based on simplistic idea - teach children enough information during one or two presentations to enable them both to understand the issues and to protect themselves.

Reality is that concepts are too complicated to be easily learned, especially by the young. Children cannot reasonably be expected to foil the intentions of adults. It may be morally misguided and perhaps psychologically harmful to place the responsibility on the children. It may have unintended negative consequences for children of creating anxiety or inhibiting cooperation with or trust in adults. Family privacy may be being unjustly invaded.

Children are unable to defend themselves if,

1. Threatened with harm
2. Fear that other adults will not believe them
3. Youth blame themselves for the abuse.
4. Youth do not understand the activity to be harmful and maintain secrecy – Quasi-consent

It is based on the unstated assumption that individuals are in control of their lives and behaviour but the reality of sexual abuse indicates how little control some children actually have over their bodies and lives. Good- bad touch may be useful in context of bullies or relatives who forcefully try to kiss a child. In reality, some "bad" touches can actually feel good. As a result, more intimate or long-term types of sexual abuse tend to be ignored.

Research is Inconclusive whether such educational programmes prevent CSA or not. But most important unambiguous finding is that prevention education encourages children to report abuse they have already suffered. This in itself may be termed as a success of such programmes.

Justice Verma Committee Report emphasised the need is to move away from sex education focussed primarily on biology towards sexuality education (social, psychological and cultural aspects of sexuality). The central goal thus seems to be to impart skills to help children:

1. Identify dangerous situations and prevent abuse
2. Identifying boundary violations
3. Unwanted forms of touching and contact
4. Them how to refuse approaches and invitations
5. How to summon help

How will such programmes make a difference:

1. Primary prevention
2. Detection/Disclosure of past and ongoing sexual abuse
3. Reducing Guilt after the abuse

Length of the programmes in place:

Wide Variations is seen

1. Some prevention programs - only one presentation
2. Others - 30 short sessions

If primary prevention is the major goal, then the programmes with more sessions is preferable because the main focus should be on imparting skills. If the major goal is case identification, then programmes with fewer sessions may well suffice.

Format of such programmes may follow following guidelines:

1. Slide presentations, movies, videotapes, plays, discussions, and role-play situations
2. Printed materials such as pamphlets, coloring books, or comic books, are used - widely distributed without any validation
3. Do not bombard children with information all at once - Let the situation/child's questions guide the lessons you share
4. Entertaining, of high interest, and non-threatening.

Important thing – They know you are ready to listen and answer

Teaching specific concrete rules and steps to follow may be better than the less distinct "good touch/bad touch" idea.

Role-playing techniques better than passive observing or reading techniques - children's active participation, especially behavioral rehearsal.

Pretesting and Post-testing in various situations

Need to tailor prevention programs to children's abilities

Essential Skills that is required for Sex Ed to be effective is refusal, help-seeking, emotion management, and decision making.

Word of caution

No evidence exists that the skills taught to children will generalize to other, more complex situations i.e. the child's ability and willingness to terminate unwanted touch effectively and appropriately in the face of flattery, emotional coercion, rejection, bribery, and secrecy.

*Instructors can be***:**

1. Teachers:
   a. familiarity with the children.
   b. most programs take place through schools
   c. able to deal with a sensitive topic in their classrooms
   d. role in identifying and supporting abused children
   e. Once trained and train many batches of students
2. Specially trained volunteers
3. Mental health professionals
4. Others, like police officers, are authority figures who have the children's respect

UNESCO's International Technical Guidance on Sexuality Education[2]

*UNESCO*came up with an evidence-informed approach for schools, teachers and health educators. It was developed by UNESCO together with UNAIDS Cosponsors (UNFPA, WHO and UNICEF), number of independent experts. It targets 5 – 18 years old children and further divided in four Age Groups. It's one of the goal is to prevent Child Sexual Abuse. One module is particularly focussed on "Gender-based violence, sexual abuse, and harmful practices"

Gender-based violence, sexual abuse, and harmful practices

- ***Learning Objectives for Level I (5-8 years)***

Describe examples of positive and harmful practices

Define sexual abuse

Key Ideas:

There are positive and harmful practices that affect health and well-being in society

Human rights protect all people against sexual abuse and gender based violence

Inappropriate touching, unwanted and forced sex (rape) are forms of sexual abuse

Sexual abuse is always wrong

- ***Learning Objectives for Level II (9-12 years)***

Explain how gender role stereotypes contribute to forced sexual activity and sexual abuse

Define and describe gender-based violence, including rape and its prevention

Demonstrate relevant communication skills (e.g. assertiveness, refusal) in resisting sexual abuse

Key Ideas:

- Honour killings, bride killings and crimes of passion are examples of harmful practices and gender inequality that violate human rights.

There are ways to seek help in the case of sexual abuse and rape.

- ***Learning Objectives for Level III (12-15 years)***

Identify specific strategies for reducing gender-based violence, including rape and sexual abuse

Key Ideas:

- All forms of sexual abuse and gender-based violence by adults, young people and people in positions of authority are a violation of human rights

Everyone has a responsibility to report sexual abuse and gender based violence

There are trusted adults who can refer you to services that support victims of sexual abuse and gender-based violence

- ***Learning Objectives for Level IV (15-18 years)***

Demonstrate ability to argue for the elimination of gender role stereotypes and inequality, harmful practices and gender-based violence

Key Idea:

- Everyone has a responsibility to advocate for gender equality and speak out against human rights violations such as sexual abuse, harmful practices and gender-based violence

Other Objectives/Key Ideas related to Sex Education/Prevention of CSA

- ***Level I (5-8 years)***

- Clearly communicating 'yes' and 'no' protects one's privacy and bodily integrity
- Trusted adults can be sources of help and support
- All media present stories which may be real or imagined
- The mass media may be positive and negative in their representation of men and women
- The mass media influence personal values, attitudes and social norms concerning gender and sexuality
- Everyone has a unique body which deserves respect, including people with disabilities
- All cultures have different ways of seeing our bodies
- Men and women and boys and girls have different bodies which change over time
- Some body parts are considered private and others not
- Describe where babies come from
- Describe the key features of puberty
- Describe the meaning of 'body rights'
- ***Learning Objective for Level II (9-12 years)***
- An abusive relationship is an example of an unhealthy relationship
- Being assertive is an important aspect of communication
- Unwanted sexual attention, harassment or abuse needs to be reported to a trusted source of help
- All cultures have norms and taboos related to sexuality and gender that have changed over time
- Sexual and reproductive anatomy and physiology
- Identify basic contraceptive methods
- Demonstrate ways of resisting unwanted sexual attention
- ***Learning Objective for Level III (12-15 years)***
- Relationship abuse and violence are strongly linked to gender roles and stereotypes
- Pornographic media tend to rely on gender stereotyping
- The Internet, cell phones and other social media can be a source of unwanted sexual attention
- Effective communication can help children and young people refuse unwanted sexual pressure and abuse by people in positions of authority and other adults
- Gender roles influence the negotiation of sexual relationships
- Shame and guilt should not be barriers to seeking help
- Distinguish between the biological and social aspects of sex and gender
- Everyone has the right to privacy and bodily integrity
- ***Learning Objective for Level IV (15-18 years)***
- Skills to identify abusive relationships
- Assertiveness and negotiation skills can help one to resist unwanted sexual pressure or reinforce the intention to practise safer sex
- There are international and national legal instruments concerning sexual abuse related issues
- Negative, inaccurate mass media portrayals can be challenged
- Gender inequality may increase sexual abuse
- Describe the sexual and reproductive capacity

Hindrance in Empowerment of Children[5,18–20]

Following factors are hindrance in imparting sex education to the children and just a hindrance in empowering them:

1. Patriarchal society
2. Adults unprepared or unwilling to deal with the problem when faced
3. Atmosphere of silence around sexuality.
4. Cultural taboos
5. Beliefs that place the burden of responsibility for a family's honor on females - may inhibit girls from disclosing sexual abuse out of fear that they will be blamed and punished
6. Inadequate resources
7. Lack of political commitment
8. Community opposition
9. Reliance upon authoritarian and instructive approaches
10. Issues of Special populations - Differently-

abled, Intellectually disabled, Autistic

11. Beliefs that adult males must be respected and deferred to, may inhibit youth of any gender from resisting or reporting adult male perpetrators.

Parent Programs[9,19,21-32]

Parents play a pivotal role in helping their children develop healthy attitudes and behaviors towards sexuality. There have been numerous attempts at imparting education to the parents so that they in turn can educate their own offspring. But such programmes faced some difficulties like:

1. Participation rates disappointing
2. Uncomfortable in talking about any sexual topics.
3. Think of their own children as well supervised and able to avoid danger
4. Do not want to frighten them unnecessarily

Conclusion

1. Provide sexuality education to children – Essential but not sufficient
2. Increasing vigilance
3. Train teachers to effectively address CSA.
4. Schools have the potential to become sites of social change where the patriarchal attitudes and cultures of gender based violence that encourage CSA
5. Training should be part of a more generalized curriculum on gender equity education
6. Creation of a caring and child-friendly environment in schools and home

Final Word of caution

Child cannot be assumed to be protected simply because of participation in a program. Adults must be encouraged to continue and to increase their protective efforts. Our relatively exclusive focus on educating the child may keep us from considering alternative approaches to sex abuse prevention.

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Original Article

Serum Testosterone levels and Suicide in first episode Schizophrenia: A longitudinal clinical study

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ABSTRACT

Background: *Neurohormones are well known modulators of neurochemical changes and play a significant role in the pathophysiology of schizophrenia. Low testosterone has been specifically associated with negative symptoms in chronic schizophrenia as well as in first episode schizophrenia. This study examines level of testosterone in first episode schizophrenia to see if it changes with treatment and correlates the same with suicidality.* ***Methods:*** *29 admitted male patients with a DSM-IVTR diagnosis of schizophrenia (first episode psychosis) were assessed in a naturalistic longitudinal cohort study. Psychopathology was assessed with the PANSS and HDRS and a locally developed scale for assessment of Suicidality (SIS-MAP). Patients were treated for 2 months duration in a 'treatment as usual' design in a naturalistic inpatient and outpatient setting in a tertiary general hospital in Canada at an Early Psychosis Intervention program at the Regional Mental Health Care Centre at St Thomas, Ontario, Canada. Levels of testosterone were estimated at the baseline and at the end of three months' treatment.* ***Results:*** *Patients who completed the study (n=29) were having a mean age of 32.2 ± 9.2 years and the mean duration of illness was 9.8 ± 3.5 months at baseline. The mean positive symptom score in this group at baseline was 25.8 ± 7.5 while the negative symptom score was 18.8 ± 6.8. SISMAP score of 23.0 ±11.1 suggestive of moderate suicide risk was noted at baseline. Baseline mean serum testosterone levels was 11.0 ±9.1 and post treatment levels were 9.1 ± 7.9 mmol/L. Both levels were lower than normal limits set by the laboratory (18-144 mmol/ml). On assessment changes in testosterone levels showed a positive correlation with baseline scores on positive symptoms subscale of the PANSS (r= 0.401, p=0.032). Suicidality scores failed to show a relation to changes in testosterone levels.* ***Conclusions:*** *Testosterone levels in patients with first episode schizophrenia in the early phase may be lower than normal limits and may remain low even after 6 months of treatment with antipsychotics. Positive symptoms were found to be significantly associated with change in pre and post treatment level of testosterone. Further research is warranted in this area to strengthen the association between testosterone levels and psychopathology in first episode schizophrenia.*

Key words: *First episode schizophrenia, Testosterone, Suicidality, PANSS*

Introduction

Suicide rates are thrice as high in individuals with first episode psychosis when compared to the general population and suicide attempts and completed suicide has been noted across the course of the illness in schizophrenia.[1] Studies have shown that suicide rates in patients with psychosis are as high as 8-15% prior to their first visit to a hospital and 5-8% during treatment.[2] Suicidal behavior in

psychosis has been linked to a family history of suicide, impulsivity, lower socio-economic status, poor social support and improper coping mechanisms.[3] Neuroendocrinological studies have suggested that dysfunction of the hypothalamic–pituitary–adrenal and/or hypothalamic–pituitary–gonadotropin axis may contribute to the pathophysiology of schizophrenia.[4] Initial studies focused on estrogens and schizophrenia and have posited a neuroprotective role of estrogens in schizophrenia.[5]

Many studies that have evaluated the relationship between the serum testosterone levels and symptoms of schizophrenia and have yielded inconsistent results.[6-8] Researchers have also investigated the relationship between serum dehydroepiandrosterone (DHEA) levels and/or its sulfate conjugate (DHEAS) with psychopathology in schizophrenia and have shown inconclusive data to support a consistent relationship.[9-11] Recent studies have demonstrated a relationship between serum testosterone levels and negative symptoms in male patients with schizophrenia.[12-13]

The current study attempted to study serum testosterone levels in an urban cohort of male hospitalized patients with suicide attempts in the first episode psychosis. The aim of the study was to try and determine an association between serum testosterone levels and the severity of suicidality in male patients with first episode psychosis and to explore the relationship between testosterone levels and severity of suicidality.

Methodology

The study was a cross sectional, naturalistic study carried out at a tertiary general psychiatric hospital. The facility was an Early Psychosis Intervention program at the Regional Mental Health Care Centre at St Thomas, Ontario, Canada. Institutional ethics committee approval for the study was obtained. The subjects were male patients with schizophrenia between the age group of 18-55 years and meeting the DSM-IVTR diagnostic criteria for schizophrenia.[14] All patients were hospitalized and in the first episode of psychosis. Willingness to participate in the study and consent was obtained from either patient (with good insight) or their legally acceptable representatives. Patients with organic psychiatric conditions, other major psychiatric disorders, substance abuse (excluding nicotine dependence) and major medical or surgical illnesses that would affect the outcome of the study were excluded from the study. The study was conducted between July and December 2017.

All patients were assessed during the first week of admission using the following scales –

Positive and Negative Symptoms Scale for Schizophrenia (PANSS) – this is a scale that has been widely used in the study of patients with schizophrenia and has 30 items with three subscales viz. a positive symptoms scale, a negative symptoms scale and a general psychopathology subscale.[15]

Hamilton Depression Rating Scale (HDRS) - abbreviated HAM-D, this is a multiple item questionnaire used to provide an indication of depression, and as a guide to evaluate recovery.[16]

Scale for Impact of Suicidality – Management, Assessment and Planning of Care (SIS-MAP) – this is a scale that looks at not only the severity of suicidal behaviour but also suggests the level of management and care needed for the patient.[17]

Serum testosterone levels - Venous blood was drawn for routine blood investigation including lipid profile. The data on level of serum testosterone was measured usingat the biochemistry laboratory of the facility.Serum testosterone levels were measured at baseline and 3 months after discharge from the hospital.

Serum testosterone levels was correlated with clinical and psychopathological parameters at baseline and differences between levels at baseline and 3 months after treatment were analyzed. Testosterone levels were also correlated with severity of suicide attempt. Data was analyzed statistically using computerized statistical software.

Results

Basic preliminary data

The total sample of study comprised of 29 male patients. The mean age of the sample was 32.2 ± 9.2 years (range 19-51 years). The total PANSS scores of the sample were 87.3 ± 18.4. The negative scale scores were 25.8 ± 7.5 and positive scale scores were 18.8 ± 6.8. The baseline scores on the SIS-MAP scale was 23.0 ± 11.1. 10 patients had mild, 10 had moderate and 9 had severe suicidality scores on the SIS-MAP scale (Table 1).

Table-1. General baseline data of the sample

Parameters	Total sample (n=29) Frequency (%) Mean (SD)	P Value	Statistical Test
Age (years)	32.2 (9.2)	Range 19-51 years	
Duration of illness (years)	6.8 (2.5)	Range 2-9 years	
HDRS	19.6 (8.3)		
Scores on PANSS			
Positive Scale	25.8 (7.5)		
Negative Scale	18.8 (6.8)		
GP	39.1 (10.4)		
Total score	87.3 (18.4)		
Serum Testosterone Baseline	11.0 (9.1)	All results in mmol/Lp = 0.055	Paired t test
Serum Testosterone Follow Up	9.1 (7.9)		
Serum Testosterone Change	1.8 (4.9)		
SIS-MAP scores			
Total score	23.0 (11.1)		
Mild (0-17)	10 (34.48%)		
Moderate (18-30)	10 (34.48%)		
Severe (>30)	9 (43.3%)		

All p values were not significant at $p < 0.05$

Difference in testosterone levels at baseline and after treatment

Changes between serum testosterone levels at baseline and 2 months post treatment were noted. There were differences but the results were not statistically significant ($p = 0.055$) (Table 1).

Correlation between scores on various scales and serum testosterone levels

No significant correlations between scores on HDRS and SIS-MAP scores were noted in respect to serum testosterone levels (Table 2). However, serum testosterone levels correlated with positive symptom subscale scores on the PANSS ($p = 0.032$). Other subscales on the PANSS did not correlate with serum testosterone levels. Serum testosterone levels also did not correlate with age of the patients and duration of illness.

Serum testosterone in relation to suicidal behaviour

When serum testosterone levels were compared between male patients in the cohort based on scores that indicated low, moderate or high suicidality based on SIS-MAP scores, no statistically significant inter-group differences were noted.

Discussion

Baseline data

Baseline data showed that all patients had

Table-2. Correlation between serum testosterone levels and various scales used

Scale used	Serum Testosterone	
Age	r = 0.024	p = 0.9 NS
Duration of Illness	r = 0.085	p = 0.662 NS
Positive Scale PANSS	r=0.400	p = 0.032*
Negative Scale PANSS	r =0.084	p = 0.665 NS
Global Psychopathology Scale (PANSS)	r = 0.312	p = 0.100 NS
SIS-MAP scale	r = 0.180	p = 0.350 NS

All p values were not significant at $p < 0.05$
(Pearson correlation used in all the measures)

severe psychopathology when assessed on PANSS. Serum testosterone levels were lower than normal in most patients and so was the mean scores as reported in previous studies.[18]

Suicidal behavior and serum testosterone levels

High suicide rates in first episode psychosis have been consistently reported in studies.[19] Suicidality in first episode psychosis has been correlated with low cholesterol[20-21] and TSH[22] levels in patients with first episode psychosis. Our results show no correlation between serum testosterone levels and severity of suicidality. We may need higher number of patients and larger studies, to deduce a probable relationship. Previous studies have shown no clear association between serum testosterone levels and suicidal behavior. Serum testosterone levels reduced further after treatment which has also been reported.[23]

Male patients with major depressive disorder have low serum testosterone levels but this association has not been consistently replicated.[24] Testosterone levels have been coorelated with depression that may be seen in patients suffering from schizophrenia as well.[25] There is a paucity of data on the relationship of negative or positive symptoms of schizophrenia with testosterone due to an interplay between negative symptoms, depressive features and extrapyramidal reactions.[26] Some experimental neurobiological studies have shown thattestosterone has a neuroprotective or neurotrophic actions on neurons and thus plays a positive role in schizophrenia.[27]

The data on serum testosterone levels in relation to suicidal behavior have been small. Some studies report low plasma testosterone levels after a suicide attempt.[28] A recent study reported that there was no difference in testosterone levels between male suicide attempters and healthy controls.[29]

General points

The present had a small sample of 29 patients and various confounding factors that were not considered that could affect serum testosterone levels and were not considered. This was a longitudinal follow up study where the effect of psychopathology and suicide over time pre and post treatment with respect to serum testosterone was studied but larger studies are needed for consistent findings.

Conclusion

Testosterone has wide ranging neuroendocrine implications in the neurobiology of schizophrenia and psychosis. It plays pivotal roles in neuronal protection, aggression, suicidal behaviour and psychopathology manifestation. It has also been linked to depression and negative symptoms in schizophrenia. There is a need to study serum testosterone as a potential biomarker and probable predictor of suicidal behaviour in male patients with schizophrenia. Further longitudinal studies in larger samples and after careful consideration of various confounding variables shall enable us to know more about this possible association.

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Original Article

Disability and its Correlation with Symptom Domains of Schizophrenia: A cross sectional hospital based study

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ABSTRACT

***Background**: Schizophrenia is a chronic, disabling illness. Disability is also correlated with symptom domains of Schizophrenia. Negative symptoms and the resulting loss in productivity are responsible for much of the world-wide personal and economic burden of schizophrenia. Therefore, study of disability and its correlation with psychopathology of schizophrenia becomes a matter of importance. **Aims of the study**: (i) to study disability in schizophrenia on various domains of Indian Disability Evaluation and Assessment Scale (IDEAS) (ii) to study the correlation of disability with psychopathology of schizophrenia. **Settings and Design**: cross sectional hospital based study. **Methods and Material**: Forty patients of schizophrenia satisfying inclusion and exclusion criteria attending the Psychiatry OPD were selected for the study. Positive and Negative Syndrome Scale (PANSS) was applied to assess severity in patients of schizophrenia. Assessment of disability was done by application of Indian Disability Evaluation and Assessment Scale. **Results**: Maximum disability was found in work (Mean = 3.30, SD = 0.99) and least disability was found in self care (Mean = 1.72, SD = 1.33). General and negative symptoms of schizophrenia were found to have higher positive correlation with disability.*

Introduction

World Health Organization defines disability as "an individual limitation or restriction of an activity as the result of an impairment".[1] Mental illness has been recognized as one of the disabilities under Section 2 (i) of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995.[2] Schizophrenia is the fifth leading cause of loss of DALYs worldwide in the age group 15–44 years.[3] Disability due to schizophrenia leads to restrictions on many domains of daily life such as self-care, leisure activities, family, work and social relationships. The patterns of disability in psychiatric illnesses is different. Disability in the form of avolition, amotivation, poor self-care, apathy and poor interpersonal skill is not visible like blindness or locomotor disability. Despite several years of pharmacological and psychosocial intervention schizophrenia remains one of the top causes of disability in the world.[4]The studies have found correlation of disability with negative symptoms and positive symptoms of schizophrenia.[1,5]Antipsychotic medications to treat the symptoms of schizophrenia have done little to address the significant functional impairments in the disorder that are associated with negative and cognitive symptoms. Negative symptoms and the resulting loss in productivity are responsible for much of the world-wide personal and economic burden of schizophrenia.[6]People with disabilities are likely to spend a lifetime of dependency and unemployment.Our society is filled with prejudice towards disabled people. Learning about disabilities is a step towards creating awareness and breaking these discriminations in order to promote change. Assessment of association of disability with psychopathology will also help in

identifying those symptoms that are stronger predictors of functional impairment. Targeting those symptoms in pharmacological and non-pharmacological management is important for better functional recovery.There is dearth of Indian Data regarding this correlation of disability with symptom domains of schizophrenia.Therefore, study of disability and its correlation with psychopathology of schizophrenia becomes a matter of importance. The present study aimed (i) to study disability in schizophrenia on various domains of IDEAS (ii) to correlate disability with psychopathology of schizophrenia.

Materials and Methods

Study design

Present study was a cross sectional study. Purposive sampling method was used. An informed consent was obtained from each subject prior to entering the study. Detailed history and physical examination was carried out for every subject who entered in the study as per a predesigned semi-structured proforma. Forty patients of schizophrenia fulfilling inclusion and exclusion criteria were selected for the study. The study was approved by institutional ethics committee.

Inclusion Criteria

(i) Subjects between 18-45 years of age (ii) Schizophrenia diagnosed as per DSM-5. (iii) Drug naive subjects.

Exclusion Criteria

(i) Patients who refused to give informed consent (ii) patients with mental retardation (iii) presence of chronic debilitating physical illness (iii) presence of psychiatric co-morbidity (iv) history of substance use.

Tools used

Positive and Negative Syndrome Scale (PANSS) was applied to assess severity in patients of schizophrenia. Assessment of disability was done by application of Indian Disability Evaluation and Assessment Scale **(**IDEAS).

Positive and Negative Syndrome Scale (PANSS)

Positive and Negative Syndrome Scale (PANSS) is a validated instrument for assessing positive, negative, and general psychopathology associated with schizophrenia.[7] It is a standardized, clinical interview that rates the presence and severity of positive and negative symptoms, as well as general psychopathology for people with schizophrenia. Of the thirty items, seven are positive symptoms, seven are negative symptoms, and sixteen are general psychopathology symptoms. The patient was rated from one to seven on thirty different symptoms based on the interview as well as reports of family members. The scale was applied by the psychiatrist trained in administrating PANSS.

Indian Disability Evaluation and Assessment Scale (IDEAS)

IDEAS is a scale for measuring and quantifying disability in mental disorders. It was developed by the Rehabilitation Committee of the Indian Psychiatric Society. It includes following items-self-care, interpersonal activities, communication and understanding, and work. Each item is scored between zero to four i.e., from 'no to profound disability. Scores for each item is added to obtain a total score. Weighage for duration of illness (DOI):

DOI: < 2 years: score to be added is 1

2-5 years: add 2

6-10 years: add 3

>10 years: add 4

Global disability score percentages are calculated by adding Total disability score and DOI.

Statistical analysis

All statistical data was analyzed using SPSS software version 20 Statistical package for window (Chicago inc). Subjects' characteristics were summarized as mean and S.D. for continuous variables and frequency and percentage for categorical variables. Pearson's correlation coefficient was used to correlate disability with severity of illness. P value < 0.05 was considered as statistically significant.

Results

Out of 40 cases 19 (47.5%) were female and 21 (52.5%) were male. The mean age (SD) was 30.15 (9.29) year. Characteristics of the study population are described in Table 1.

Table-1: Characteristics of the study population

Characteristics of the study population	n (% of total) or mean (SD)
Age	30.15 (9.29)
Sex	
Male	21 (52.5)
Female	19 (47.5)
Religion	
Hindu	14 (35)
Muslim	26 (72.5)
Marital Status	
Single	14 (35)
Married	24 (60)
Divorced/separated	2 (5)
Occupation	
None	29 (72.5)
Farmer	9 (22.5)
Business	2 (5)
Job (Govt., Private)	0 (0)
SES-modified B.G. Prasad classification	
Upper	3 (7.5)
Middle	33 (82.5)
Lower	4 (10)

Severity of schizophrenia

Severity of schizophrenia was assessed by PANSS. Mean score and SD on positive symptoms, negative symptoms and general psychopathology symptoms are depicted in the Table 2.

Disability in schizophrenia was assessed by IDEAS. Table 3 shows distribution of patients on the basis of severity of disability.

Table 4 shows mean disability scores on various domains of IDEAS. Maximum disability was found in work (Mean = 3.30, SD = 0.99) and least disability was found in self-care (Mean = 1.72, SD = 1.33).

Table-2: Severity of schizophrenia (on PANSS)

Symptom dimension of Schizophrenia	Mean(SD)
Total positive score	25.97 (8.69)
Total negative score	24.80 (5.95)
Total general psychopathology score	35.25 (10.05)
Total PANSS score	86.07 (20.01)

Table-3: Disability in schizophrenia

Severity of disability	Frequency (%)
No disability	0 (0)
Mild	5 (12.5)
Moderate	20 (50)
Severe	15 (37.5)
Profound	0 (0)

Table-4: Disability in patients on various domains of IDEAS

Disability domains	Schizophrenia Mean(SD)
Self care	1.72(1.33)
Interpersonal activities	2.47(0.93)
Communication and understanding	2.85(0.94)
Work	3.30(0.99)

Table-5: Correlation of global disability with symptom domains of schizophrenia

Variable	Positive symptoms	Negative Symptoms	General Symptoms
Global Disability	.582	.606	.644

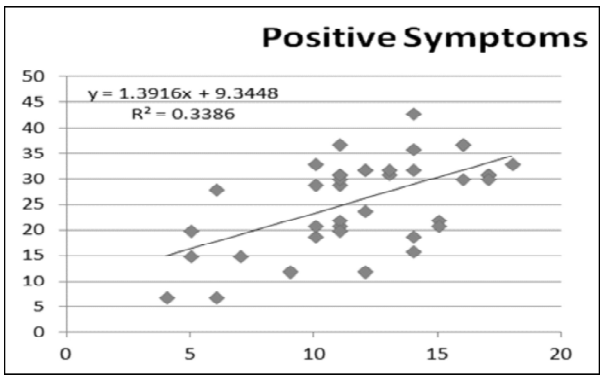

Fig. 1

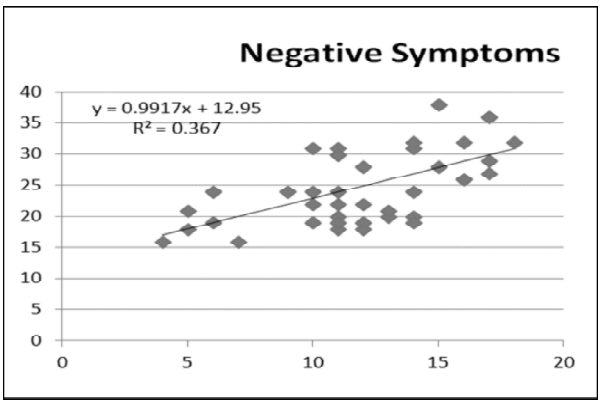

Fig. 2

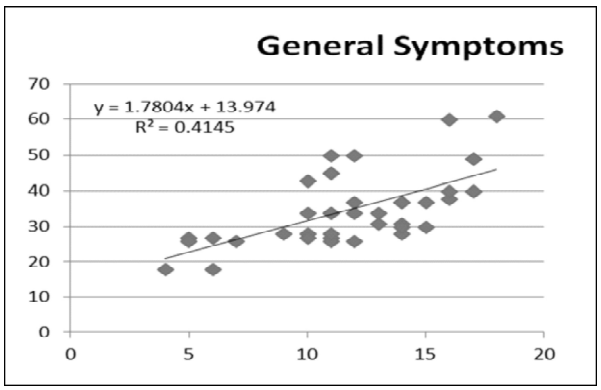

Fig. 3

Table 5 shows the value of Pearsons'correlation coefficient which is maximum in general psychopathology domain (r = .644) followed by negative symptoms domain (r = .606) and least for positive symptoms (r = .582).The correlation was statistically significant (p value < 0.01). In figure (i), (ii) and (iii) disability scores as assessed by IDEAS are plotted on x-axis, the scores on positive, negative and general psychopathology domains of PANSS are plotted on y-axis respectively. The correlation plots are showing least scattering around the trend line in general psychopathology domain plot followed by negative symptoms domain plot. This suggest that general symptoms of schizophrenia have strongest positive correlation with disability which is followed by negative symptoms.

Discussion

It is reported that five of the ten leading causes of disability worldwide are in the category of mental illnesses. In the present study males outnumbered females which is in consonance of the findings of study conducted by Shihabuddeen et al.[8] Men develop schizophrenia slightly earlier than women; whereas most males become ill between 16 and 25 years old, most females develop symptoms several years later, and the incidence in women is noticeably higher in women after age 30. As our study included patients in the age group 18-45 years this might be one of the reason of male preponderance. Other reason could be greater health seeking behavior in males due to more severe symptoms and also due to patriarchal Indian society. In this study 12.5% of schizophrenia patients were having mild disability, 50% were having moderate disability and 37.5% were having severe disability. Maximum disability was found in work. Occupational disability is also reported as the most disabling among all the domains of disability by Padmavathi et al.[9] Schizophrenia symptoms like hallucinations, disorganized behavior, illogical thinking, illogical speech and flattened affect make it impossible for the patient to function in a work environment.

The least disability observed for personal care was also in keeping with similar observation in a previous study by Balhara et al.[10] However, another Indian study conducted in a mental hospital setting found the highest level of disability for understanding and communication domain of World Health Organization Disability Assessment Schedule-2.[11] The result of this study shows that general and negative symptoms of schizophrenia have stronger positive correlation with disability as compared to positive symptoms suggesting thatgeneral and negative symptoms of schizophrenia are more disabling than positive symptoms. Similar findings are also reported by Swain and Behura[1] and Lyngdoth and Ali.[5] This is supported by the fact that presence of general psychopathology symptoms (impaired judgement, poor insight, poor attention, impulsivity etc.) and presence of negative symptoms (apathy, alogia, amotivation etc) are strong predictors of functional impairment and poor quality of life.

Conclusion

Schizophrenia is a chronic, disabling psychiatric illness. It leads to impairment of social, occupational and other important areas of functioning. General and negative symptoms of schizophrenia are more disabling than positive symptoms. Pharmacological and non-pharmacological management should target these symptoms.

Limitations

- The sample size of the study is small.
- The study is cross sectional study.
- It is hospital-based study so patients having milder disability may have been missed.
- Subjects between 16-45 years of age were included as Schizophrenia and OCD commonly affects this age group. So patients having late onset schizophrenia might have been missed.

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Original Article

Psychiatric Co-Morbidity in Alcohol, Nicotine and Alcohol – Nicotine Dependent Patients

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ABSTRACT

Introduction*: Alcohol & Nicotine use disorders are one of the most commonly encountered problems in clinical practice in patients with substance use disorders with a high degree of co-morbidity.* ***Aims and Objectives****: To find out Psychiatric Co-morbidity in Alcohol, Nicotine and Alcohol-Nicotine Dependent patients.* ***Materials and Methods*** *:The study includes 120 patients between age group of 18 to 60 years who attended the Psychiatry OPD of Medical College and fulfilled inclusion & exclusion criteria were assessed for Socio-Demographic and Clinical Profile using General Health Questionnaire (GHQ-60) for assessing psychiatric morbidity in the subject, Hamilton Anxiety Rating Scale (HAM–A) for assessing anxiety, Hamilton Depression Rating Scale (HDRS) for assessing Depression and Brief Psychiatric Rating Scale (BPRS) for Psychosis/Schizophrenia & for other psychiatric disorders and Arizona Sexual Experience Scale (ASEX) for assessment of Sexual Dysfunction.* ***Results*** *: Mean age of the subjects was in the range of 30-40 years. Most of the study subjects were from lower socio economic status (55.8%), married (57.5%) and had positive family history of alcohol /nicotine abuse (75.8%). According to the ICD-10, around 70% patients had prevalence of psychiatric disorders in alcohol and alcohol and nicotine group however less prevalence (27%) was seen in only nicotine group. 50% patients in alcohol as well as alcohol and nicotine group had sexual disorder. Most common psychiatric disorder which was reported in three groups was depression followed by anxiety. Most common sexual disorder in all the three groups was Impotence. Prevalence of depression (HAM-D score) was around 42%, and anxiety (HAM-A score) was 15% in alcohol and alcohol nicotine dependent patients. Mean ASEX score for sexual dysfunction and BPRS score for schizophrenia was on higher side in patients with alcohol and alcohol/nicotine dependence.* ***Conclusion****: Psychiatric co-morbidity in alcohol & nicotine dependence is very high.*

Keywords*: Psychiatric Co-morbidity, Alcohol Dependence, Nicotine Dependence.*

Introduction

Alcoholic beverages, known since Vedic period, are used for worship purposes, medicinal preparations, and widely consumed as a relaxant.[1,2] Alcohol and Nicotine use disorders are one of the most commonly encountered problems in clinical practice in patients with substance use disorders with a high degree of co-morbidity. In Southeast Asia Region, per capita pure Alcohol consumption has increased by over 50% between 1980 and 2000. Similarly, in India also, per capita Alcohol consumption has increased alarmingly by 106.7% between 1970–1972 to 1994–1996.[1,3]

Mental and Behavioral disorders occur more often among alcoholics than in the general population. The presence of co-morbid psychiatric disorders in patients of Alcohol Dependence has clinical and prognostic implications. For instance, Alcoholics may

be at increased risk of psychosocial and interpersonal problems, treatment noncompliance, attempted and completed suicide with co-morbid depression.[4]

Alcohol dependence is also known to cause sexual dysfunction. The common sexual dysfunctions seen are erectile dysfunction, followed by premature ejaculation, retardation of ejaculation and decreased libido among men and vaginal dryness and dyspareunia among women.[5] Tobacco use is an important preventable public health issues of the world and projected to be the single largest cause of mortality worldwide. Oral cancer patients are highest in India due to Tobacco Use. The Smoke can interact with other occupational or non-occupational cancer causing agents and increase lung cancer risk.[6] Smokers are reported to have higher rates of impaired perceptual and motor skills, absenteeism and poor endurance than non smokers.[7]

Use of Tobacco is a complex multistage behavior influenced by genes and environment in which we live.[8] Tobacco contains 'Nicotine' which leads to physical and psychological dependence comparable to the dependence of opium mainly Heroin. Alcoholics are three times more likely to have another psychiatric disorders. The findings have also been replicated in many other studies.[9] The self-medication hypothesis for drug dependence also signifies etiological relationship between the substance abuse and mental disorder.[10]

Excessive alcohol use has been identified as a major contributor to the global burden of disease. It causes 5.9% of all deaths globally. In addition, it is responsible for 5.1% of the disability adjusted life years.[11] Excessive use of alcohol is a component cause of more than 200 disease and injury conditions.[12] Epidemiological as well as clinic based studies[13-18] from western countries have reported a high prevalence of co-morbidity of alcohol use disorder and psychiatric disorders.

There have been few Indian studies addressing the psychiatric co-morbidity in alcohol and nicotine dependent patients. This study was undertaken with objective to study the prevalence of psychiatric co-morbidity in Alcohol and Nicotine dependent patients attending Psychiatry OPD/De-Addiction clinic.

Materials and Methods

Study Area

Psychiatry Department, National Institute of Medical Sciences and Research, Jaipur, Rajasthan.

Study Population

Patients attending Outpatient (OPD)/De-Addiction Clinic in National Institute of Medical Sciences and Research, Jaipur and diagnosed with Alcohol, Nicotine and Alcohol-Nicotine Dependence.

Study Design

Cross Sectional Study

Sample Size

A total of 120 consecutive patients satisfying the inclusion and exclusion criteria were taken in the study after informed consent. The study subjects included diagnosed cases of Alcohol, Nicotine and Alcohol-Nicotine dependence attending outpatient/ de-addiction clinic in this hospital.

Inclusion Criteria

1. All Patients of Alcohol, Nicotine and Alcohol-Nicotine dependence of age 18-60 years.
2. Who will give a consent for participating in the study?

Exclusion Criteria

1. Patients who were of age below 18 or above 60 years.
2. Patients who did not give consent.
3. Patients of other substance abuse than Nicotine and Alcohol.
4. Patients who came to OPD with psychiatric complaints primarily.
5. Patients with significant medical and surgical disorders.

Methodology

All patients aged 18-60 years attending psychiatry OPD/de-addiction clinic of NIMS Hospital and fulfill the inclusion criteriawere provided with:

1. Written Informed Consent Form
2. Patients socio-demographic Information, history and clinical profile Sheet
3. Performa for Assessment of Alcohol/ Nicotine/Alcohol-Nicotine Dependence

After obtaining written informed consent,the subjectswere assessed to obtain information as per following:

*A. ICD-10[19] Criteria*for diagnosing Psychiatric and Sexual disorders in alcohol and nicotine dependent patients.

B. General Health Questionnaire(GHQ-60[20]). It is a self-administered questionnaire to assess existing psychiatric disorders.

After GHQ-60, following scales were used to find out severity of different psychiatric and sexual disorders: -

1. Hamilton Depression Rating Scale "HAM-D[21]" for severity of Depression.
2. Hamilton Anxiety Rating Scale "HAM-A[22]" for severity of Anxiety
3. Brief Psychiatric Rating Scale "BPRS[23]" for Psychosis/Schizophrenia and other psychiatric disorders.
4. Arizona Sexual Experience Scale (ASEX[24]) - A user friendly 5 item rating scale that quantifies sexual dysfunction.

Results

After collecting the data like socio-demographic profile, psychiatric co-morbidity in Alcohol, Nicotine and Alcohol-Nicotine dependent patients, the relevant statistical analysis were done and the findings of results is discussed accordingly.

Mean age of the study subjects was 38.32 years with over half of them were below 40 years of age.

Most of the study cases (55.8%) were from lower socio-economic class while 31.7% and 12.5% were in lower and upper middle class respectively.

Family history of alcohol or nicotine abuse was given by 75.8% cases.

Out of total 120 cases, 57.5% were married while 30.8% were single and 11.7% were either divorced or single.

The study subjects included diagnosed cases of alcohol (n-40), nicotine (n-40) and alcohol-nicotine dependence (n-40) attending outpatient/de-addiction clinic in this hospital.

Mean age of study cases was comparable among all three study groups (37.68, 40.14 and 37.13 years in alcohol, nicotine and alcohol and nicotine group). The difference was statistically non-significant (p-0.56).

Table-1: Distribution of cases as per age group

Age group (yrs)	N = 120	%	Alcohol	Nicotine	Alcohol & Nicotine
18-30	33	27.5%	14	11	08
31-40	39	32.5%	11	14	14
41-50	31	25.8%	08	12	11
51-60	17	14.2%	07	03	07

Mean age - 38.32 +/- 9.16 years

Table-2: Distribution of cases as per Socio-economic status

Socio-economic Status	N = 120	%	Alcohol	Nicotine	Alcohol & Nicotine
Upper	0	0.0%	0	0	0
Upper Middle	15	12.5%	04	05	06
Lower Middle	38	31.7%	14	10	14
Lower	67	55.8%	22	25	20

Table-3: Distribution of cases as per Family history of Alcohol/ Nicotine Dependence

Family History of Alcohol/ Nicotine Abuse	N = 120	%	Alcohol	Nicotine	Alcohol & Nicotine
No	29	24.2%	10	14	15
Yes	91	75.8%	30	26	25

Table-4: Distribution of cases as per marital status

Marital Status	N = 120	%	Alcohol	Nicotine	Alcohol & Nicotine
Married	69	57.5%	23	24	22
Single	37	30.8%	11	13	13
Divorce/ Separated	14	11.7%	06	03	05

Table-5: Distribution of cases as per type of substance abuse

Substance Dependence	N = 120	%
Alcohol	40	33.3%
Nicotine	40	33.3%
Alcohol & Nicotine	40	33.3%
Total	120	100.0%

No difference was observed between study groups with respect to socio-economic status (p-0.78).

No difference was observed between study groups with respect to family history of alcohol/ nicotine abuse (p-0.72).

No difference was observed between study groups with respect to marital status (p-0.664).

Table-6: Mean age comparison among study groups

Age (years)	Group	N	Mean	SD	p- value
	Alcohol	40	37.68	9.01	
	Nicotine	40	40.14	9.78	0.56
	Alcohol & Nicotine	40	37.13	9.11	

Table-7: Comparison of study groups as per socio-economic status

	Group			
SES	Alcohol	Nicotine	Alcohol & Nicotine	Total
Middle	18	19	16	53
	45.0%	47.5%	40.0%	44.2%
Lower	22	21	24	67
	55.0%	52.5%	60.0%	55.8%
Total	40	40	40	120
	100.0%	100.0%	100.0%	100.0%
	p - 0.78			

Table-8: Comparison of study groups as per Family history of abuse

	Group			
Family History of Alcohol/ Nicotine Abuse	Alcohol	Nicotine	Alcohol & Nicotine	Total
No	10	11	8	29
	25.0%	27.5%	20.0%	24.2%
Yes	30	29	32	91
	75.0%	72.5%	80.0%	75.8%
Total	40	40	40	120
	100.0%	100.0%	100.0%	100.0%
	p - 0.72			

Table-9: Comparison of study groups as per marital status

	Group			
Marital Status	Alcohol	Nicotine	Alcohol & Nicotine	Total
Married	23	25	21	69
	57.5%	62.5%	52.5%	57.5%
Single/ Divorced/ Separated	17	15	19	51
	42.5%	37.5%	47.5%	42.5%
Total	40	40	40	120
	100.0%	100.0%	100.0%	100.0%
	p - 0.664			

Table-10: Comparison of study groups as per presence of psychiatric disorders (ICD-10)

	Group			
Psychiatric Disorders (ICD-10)	**Alcohol**	**Nicotine**	**Alcohol & Nicotine**	**Total**
No	12	29	11	52
	30.0%	72.5%	27.5%	43.3%
Yes	28	11	29	68
	70.0%	27.5%	72.5%	56.7%
Total	40	40	40	120
	100.0%	100.0%	100.0%	100.0%
	p < 0.05			

Table-11. Comparison of study groups as per presence of sexual disorders

	Group			
Sexual Disorders (ICD-10)	**Alcohol**	**Nicotine**	**Alcohol & Nicotine**	**Total**
No	22	32	20	74
	55.0%	80.0%	50.0%	61.7%
Yes	18	8	20	46
	45.0%	20.0%	50.0%	38.3%
Total	40	40	40	120
	100.0%	100.0%	100.0%	100.0%
	p < 0.05			

Table-12: Comparison of study groups as per type of psychiatric disorder

	Group					
Psychiatric Disorders	**Alcohol**		**Nicotine**		**Alcohol & Nicotine**	
None	12	30.0%	29	72.5%	11	27.5%
Depression	17	42.5%	6	15.0%	18	45.0%
Anxiety Disorder	6	15.0%	5	12.5%	7	17.5%
Bipolar Affective Disorder	3	7.5%	0	0.0%	2	5.0%
Schizophrenia and other Pschosis	2	5.0%	0	0.0%	2	5.0%

Table-13: Comparison of study groups as per type of sexual disorder

	Group					
Sexual Disorders	**Alcohol**		**Nicotine**		**Alcohol & Nicotine**	
None	22	55.0%	31	77.5%	20	50.0%
Loss of Libido	6	15.0%	5	12.5%	8	20.0%
Excessive Libido	2	5.0%	1	2.5%	3	7.5%
Impotence	7	17.5%	2	5.0%	7	17.5%
PME	1	2.5%	0	0.0%	0	0.0%
Delayed Ejaculation	2	5.0%	0	0.0%	2	5.0%

The prevalence of psychiatric disorders was 70% and 27.5% in Alcohol and Nicotine groups while prevalence was 72.5% in Alcohol + Nicotine group.

The prevalence of sexual disorders was 45% and 20% in alcohol and nicotine groups while prevalence was 50% in alcohol + nicotine group.

Most common psychiatric co-morbidity in alcohol, nicotine and alcohol + nicotine group was depression (42.5%, 15%, 45%) followed by anxiety disorder (15%, 12.5%, 17.5%).

Most common sexual disorder in alcohol, nicotine and alcohol + nicotine group was impotence

Table-14: Comparison of study groups as per presence and severity of Depression

	Group					
Depression (HAM - D)	**Alcohol**		**Nicotine**		**Alcohol & Nicotine**	
None	23	57.5%	34	85.0%	22	55.0%
Mild	13	32.5%	6	15.0%	12	30.0%
Moderate	4	10.0%	0	0.0%	5	12.5%
Severe	0	0.0%	0	0.0%	1	2.5%
Total	40	100.0%	40	100.0%	40	100.0%

Table-15: Comparison of study groups as per presence and severity of Anxiety

	Group					
Anxiety (HAM - A)	**Alcohol**		**Nicotine**		**Alcohol & Nicotine**	
None	34	85.0%	35	87.5%	33	82.5%
Mild	6	15.0%	4	10.0%	6	15.0%
Moderate	0	0.0%	1	2.5%	1	2.5%
Severe	0	0.0%	0	0.0%	0	0.0%
Total	40	100.0%	40	100.0%	40	100.0%

Table-16: Mean comparison of study groups as per BPRS Score

BPRS Score	**Group**	**N**	**Mean**	**SD**	**p-value**
	Alcohol	40	26.68	7.68	**< 0.01**
	Nicotine	40	17.68	5.98	
	Alcohol & Nicotine	40	27.65	7.66	

Table-17: Comparison of study groups as per presence of Sexual Dysfunctions

	Group			
Sexual Dysfunction (ASEX)	**Alcohol**	**Nicotine**	**Alcohol & Nicotine**	**Total**
No	21	32	19	72
	52.5%	80.0%	47.5%	60.0%
Yes	19	8	21	48
	47.5%	20.0%	52.5%	40.0%
Total	40	40	40	120
	100.0%	100.0%	100.0%	100.0%
	p < 0.05			

Table-18: Mean comparison of study groups as per ASEX score

ASEX Score	**Group**	**N**	**Mean**	**SD**	**p- value**
	Alcohol	40	20.52	4.32	**<0.01**
	Nicotine	40	11.23	4.56	
	Alcohol & Nicotine	40	22.31	3.29	

(17.5%, 5%, 17.5%) followed by loss of libido (15%, 12.5%, 20%).

Mild to moderate depression in alcohol, nicotine and alcohol + nicotine group was observed in 42.5%, 15% and 42.5% respectively. One case of severe depression was seen in alcohol + nicotine group.

Mild to moderate anxiety in alcohol, nicotine and alcohol + nicotine group was observed in 15%, 12.5% and 17.5% respectively.

Mean BPRS Score measured for psychosis/ schizophrenia and other psychiatric disorders was significantly higher in alcohol and alcohol + nicotine

group respectively as compared to nicotine group ($p < 0.01$).

Sexual dysfunction (as measured by ASEX score) was seen in 47.5%, 20% and 52.5% cases of in alcohol, nicotine and alcohol + nicotine group respectively ($p < 0.05$).

Mean ASEX Score that quantifies sexual dysfunction was significantly higher in alcohol and alcohol + nicotine group respectively as compared to nicotine group ($p < 0.01$).

Discussion

Mean age of the patients was 38.32 years. 55% patient in our study were from low socio-economic status followed by lower middle class. Study done by Ross et.al[25] also found that majority patients having psychiatric problems belong to lower socio economic status. The results with respect to socio economic status may not be conclusive but our study results can be interpreted that subjects with financial crisis are more likely to be alcohol/ nicotine dependent. 75 % patients had family history of alcohol or nicotine. This high percentage of positive family history shows that subjects were influenced by their family members for alcohol and nicotine abuse. Maximum number of patients in our study were married (57%). These results were in accordance to the study done by Quraishi et al[26] were majority of patients were married, employed and educated below secondary levels.

WHO has classified various mental and psychiatric disorders under ICD-10 criteria which was used to diagnose the patients in our study. More than 70% patients were associated with psychiatric disorders in alcohol and alcohol –nicotine dependent patients whereas only 27% patients had problems in nicotine dependent group. Cross sectional study done by Farrell et. al[27] found that 22 % patients with nicotine dependence and 45% with alcohol dependence are suffering from some psychiatric disorder. The types of psychiatric disorders found in our study can be enumerated as: Depression, Anxiety disorder, Bipolar disorder, Schizophrenia disorder and sexual function disorder.

Most common psychiatric co-morbidity in Alcohol, Nicotine and Alcohol + Nicotine group was Depression (42.5%, 15%, 45%) followed by Anxiety disorder (15%, 12.5%, 17.5%). Schidner et al[28] found 42% prevalence of anxiety disorder in patients who were taking treatment for alcohol dependence. Global survey done by Bowel et al[29] on Tobacco patients also found anxiety disorder to be positively correlated with anxiety.Weissman et al[30] reported that 70% of alcoholics meet criteria for another psychiatric diagnosis at some point during their lifetimes and that 50% of those with a history of alcohol abuse or dependence also meet criteria for major depression or bipolar affective disorder. It was seen that variety of sexual disorder were also reported in our study with prevalence of 45% in alcohol group, 20% in nicotine group and 50% in alcohol plus nicotine group. Most prevalent sexual disorder was impotence followed by loss of libido in all the groups. The present research findings supported the previous results that the most common alcohol-associated sexual disorder was erectile dysfunction, followed by sexual desire and premature ejaculation.

Hamilton Depression Rating Scale (HDRS) is a clinician-rated scale, with 17-item version being the most commonly used to assess the severity and frequency of depressive symptoms. Things are rated from 0 to 4 or 0 to 2, as per intensity and frequency of symptoms in the past one week. The present research showed maximum prevalence of severe depressive symptoms in patients with alcohol + nicotine dependence. However, comparison study done by Pendharkar et al[31] found significant depressive symptoms in patients with alcohol vs nicotine dependent patients. Another scale HAM-A is used to assess the severity and frequency of anxiety. Around 12-15% patients in all the groups showed mild to moderate symptoms of anxiety whereas study done Yoshimi et al,[32] 45% of patients experienced social anxiety disorder in alcohol dependent patients. Mean BPRS Score measured for psychosis/schizophrenia and other psychiatric disorders was higher in alcohol and alcohol and nicotine group respectively as to nicotine group. The prevalence of schizophrenia was 2.5% in study done by Hesselbrock et al.[33]

Arizona Sexual Experience Scale (ASEX) is a five-item self-report scale using a six-point evaluation method. It evaluates sexual function in men and women, independent of sexual relationship or orientation with sexual partner. A score of more than 19 on ASEX or a score of more than 5 on any one item or a score of more than 4 on any three items is

linked with clinical sexual dysfunction. Sexual dysfunction was reported in more than 40% patients in both alcohol and Alcohol-Nicotine dependent patients. Similar results were seen with Pendhakaret al[31] where frequency of sexual dysfunction was 8%.The highest frequency was seen for dysfunction for arousal (57.4%), followed by problems in desire (54.4%), erection (36.6%), satisfaction with orgasm (34.6%) and ability to reach orgasm was least affected (12.87%).

One of the most important groups of risk factors consistently implicated in both the etiology of smoking behavior as well as the subsequent developmental course of nicotine dependence is the mental and behavioral disorders. Evidence for these associations comes from investigations in which depression, anxiety,alcohol and behavior disorders have each been shown to increase risk of later smoking.

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Original Article

Assessment of Anxiety symptoms among medical students at the time of joining and after one year

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ABSTRACT

Background: *Medical students confront significant academic, psychosocial and existential stressors for coping with new college. A high prevalence of depression or anxiety have been found in medical students in comparison with the general population. So assessment of the symptoms of anxiety among medical students at time of joining and their follow up are essential to take necessary steps to treat or prevent any psychiatric morbidity.* ***Objective****: To compare anxiety symptoms among newly joined medical students after one-year period with their baseline anxiety symptoms.* ***Materials and Methods****: Assessment of anxiety symptoms of 230 newly joined MBBS students of Medical institute, Rajasthan, India was done after one year who had been assessed earlier by administering a self-reporting Sinha's Comprehensive Anxiety Test (SCAT). Paired t test was applied for statistical significance.* ***Results****: Majority were males(59.6%).67% live in rural areas and 48.7% were in joint family. Baseline SCAT score and SCAT score after one year for all students was 23.32 ± 12.57 and 17.94 ± 15.01 respectively, their difference was found statistically significant (t =-6.103; p=0.000). Baseline SCAT score and SCAT score after one year for male and female students were 21.80 ± 11.68; 15.87 ± 15.10 and 25.56 ± 13.53; 20.99 ± 14.42 respectively, their difference was found statistically significant (p=0.001). But females were still significantly affected with anxiety symptoms as compared to males.* ***Conclusions****: Although anxiety symptoms among newly joined medical students significantly reduced after one year, but the students who displayed extremely high anxiety and high anxiety on severity of SCAT scale at baseline are continue to show high score after one year. So, adequate psychological services and various relaxation techniques should be advised to manage these symptoms among medical students.*

Keywords: *Anxiety, SCAT, MBBS, Medical, Students.*

Introduction

Like all young adults, undergraduate medical students need to cope with the academic and social demands in their preparation for professional careers as well as psychosocial and psychological changes which are connected to the development of an autonomous personal life.The medical curriculum course is vast and highly stressful.[1-4] After joining MBBS course, a first year student has to undergo rigorous training. There is a sudden transition from intermediate (10+2) to MBBS, where in there is a huge difference in syllabus. Due to vast course and long hours of lectures, students are constantly under stress.[5] Similarly it takes time for the students to adapt to the new environment.[6-8] The students who are not from English background have to put an extra effort to understand the classes which are exclusively taught and discussed in English.[9] Apart from above factors, other factors like staying away from family, peer pressure to deliver good results put an extra risk to develop psychological symptoms.

According to research, symptoms of anxiety

and symptoms of depression were prevalent in medical students (43% and 14%, respectively).[10] Various studies have shown that there is incidence of stress, anxiety and depression among first year medical students.[11-14] Studies from Pakistan showed high incidence of anxiety among female students.[15,16]

The potential consequences of anxiety and other psychological problems in the long run may result in substance abuse, inter-personal relation difficulties etc. Regarding these consequences, it is important to offer adequate guidance to medical students who are at high risk of mental health problems during their education to prevent and detect these problems. [17-19] To date, little attention has been paid to the extent of mental health problems among Indian medical students during their education. Therefore aim of the study is to assess the anxiety symptoms among newly joined medical students after one year period and compare it with baseline anxiety symptoms.

Materials and Methods

A prospective study was conducted among 230 first year MBBS students in Medical institute, Rajasthan to assess the anxiety symptoms among newly joined medical students after one year who had been assessed earlier. It was a questionnaire based study. A total of 230 (137 boys and 93 girls) between 18 to 27 years age group participated in this study. It was completely based on voluntary participation and they were also free to withdraw from the study at any point or stage. Before administering the questionnaire the nature of the study was explained to the students in detail. Written consent was taken from all the participants and complete confidentiality was assured. Ethical committee approval was taken prior to the study.

Tools

Comprehensive Anxiety Test, Constructed and Standardized by Sinha, A.K.P. and Sinha L.N.K. (1971), to measure the Anxiety of school and college students. Test Re-Test reliability is shown 0.85 and Spearman Brown formula are 0.92. The validity of test is 0.62.The scale consists of 90 items. The maximum possible score of this test is 90 and minimum possible scores is zero. Each item of the test is scored 01 (one) for positive response and 00 (zero) for negative response. The sum of all positive or yes responses would be the total anxiety score of the individual.[20]

Statistical Analysis

Statistical tool SPSS version 22 was used for data analysis and Paired t-test was applied for statistical significance.

Results

The baseline questionnaire was filled out by 230 medical students. Of these students, again 230 students participated in the 1-year follow-up questionnaire, which was a response rate of 100%.

Table-1: Socio-demographic variables

	Variables	N=230	Mean ± (SD)
Age (Years)			19.85 ± 1.39 (18-27)
Sex	Male	137 (59.6)	
	Female	93 (40.4)	
Socio-economic	Upper	113 (49.1)	
Class	Upper Middle	32 (13.9)	
	Middle	24 (10.4)	
	Lower Middle	37 (16.2)	
	Lower	24 (10.4)	
Family Type	Nuclear	93 (40.4)	
	Nuclear Ext	24 (10.5)	
	Joint	112 (48.7)	
	Others	1 (0.4)	
Religion	Hindu	222 (96.5)	
	Muslim	4 (1.7)	
	Sikh	2 (0.9)	
	Christian	2 (0.9)	
Locality	Urban	76 (33)	
	Rural	154 (67)	

Table 1 shows sociodemographic variables of students. Most of the participants were male (59.6%), belong to upper socioeconomic class (49.1%), Hindu religion (96.5%), rural areas (67%) and live in joint family (48.7%). Mean age of participants was 19.85 ± 1.39 years.

Table 2 shows comparison of SCAT scores. Baseline SCAT score and SCAT score after one year for all students was 23.32 ± 12.57 and 17.94 ± 15.01 respectively, their difference was found statistically significant (t = -6.103; p = 0.000). Baseline SCAT score and SCAT score after one year for male students was 21.80 ± 11.68 and 15.87 ± 15.10 respectively, their difference was found statistically significant (t = -4.924; p = 0.000). Baseline SCAT score and SCAT score after one

Table-2: Comparison of SCAT Score after 1 year

SCAT Score	No. of Students (N)	Mean ± SD	t-score	p-value
In 2017 Total Students	230	23.32 ± 12.57	-6.103	.0001
in 2018	230	17.94 ± 15.01		
In 2017 Male Students	137	21.80 ± 11.68	-4.924	.0001
In 2018	137	15.87 ± 15.10		
In 2017 Female Students	93	25.56 ± 13.53	-3.598	.001
In 2018	93	20.99 ± 14.42		

Table-3: Comparison of Severity of Anxiety Symptoms on SCAT Scale

Severity SCAT Scale	Number (%)				Mean ± SD			
	Male		Female		Male		Female	
	2017	2018	2017	2018	2017	2018	2017	2018
Extremely High Anxiety	38(28)	28(20)	36(39)	28(30)	36.74 ± 5.41	39.96 ± 9.91	38.81 ± 10.22	38.54 ± 8.14
High Anxiety	18(13)	12(9)	07(7)	09(10)	26.44 ± 1.82	26.00 ± 2.49	27.29 ± 0.76	25.67 ± 1.50
Normal Anxiety Level	34(26)	15(11)	21(23)	13(14)	20.06 ± 2.40	19.40 ± 3.11	21.62 ± 2.87	22.62 ± 3.04
Low Anxiety	12(9)	09(7)	12(13)	10(11)	14.50 ± 0.52	13.44 ± 1.88	16.17 ± 1.75	15.20 ± 2.62
Extremely Low Anxiety	35(260	73(53)	17(18)	33(35)	7.40 ± 3.27	4.53 ± 3.79	8.29 ± 3.53	5.94 ± 3.94

year for female students was 25.56 ± 13.53 and 20.99 ± 14.42 respectively, their difference was found statistically significant (t = -3.598; p = 0.001). But females were still significantly affected with anxiety symptoms as compared to males.

INSERT TABLE 3 HERE

Table 3 shows comparison of severity of anxiety symptoms on SCAT Scale. At baseline, male and female students who displayed extremely high anxiety and high anxiety (36.74 ± 5.41, 38.81 ± 10.22; 26.44 ± 1.82, 27.29 ± 0.76) on severity of SCAT scale are continue to show high score after one year (39.96 ± 9.91, 38.54 ± 8.14; 26.00 ± 2.49, 25.67 ± 1.50) respectively.

Discussion

The present study was aimed to assess the anxiety symptoms among newly joined MBBS students after one year and compare it with baseline using Sinha's Comprehensive Anxiety Test (SCAT). In our study, Baseline SCAT score and SCAT score after one year for all students was 23.32 ± 12.57 and 17.94 ± 15.01 respectively, their difference was found statistically significant (t = -6.103; p = 0.000). Similarly Baseline SCAT score and SCAT score after one year for male and female students was also found statistically significant (t = -4.924; p = 0.000); (t = -3.598; p = 0.001) respectively. But females were still significantly affected with anxiety symptoms as compared to males. However, there was no correlation found among anxiety symptoms with respect to the socioeconomic class, area of locality and family type. Previous authors while conducting cross-sectional studies also found significant anxiety symptoms while assessing anxiety symptoms, but sample size, and method of measuring anxiety may be variable. Studies from different parts of world show consistent results like study from the United Kingdom showed, more than one third of first-year students had poor mental health when measured with the General Health Questionnaire 12, which assesses anxiety and depression.[21] Similarly study from Bangladesh showed Symptoms of depression, anxiety and stress were found among 54.3%, 64.8% and 59.0% of medical students respectively. Eighty five (81%) students either had depression, anxiety or stress alone or in combination. Combination of depression, anxiety and stress was highest (36.2%).[22] In India, study by Vaidya in 2007 among first year medical students, the incidence of anxiety was most prevalent.[23] However during follow up studies, previous authors found contradictory findings and there was no follow up study reported from India. Studies from different

parts of world show consistent results like study from the Netherlands showed 36%, 28% and 48% of the medical students reported symptoms of depression, anxiety and mental health problems at follow up respectively. The incidence between 2010 and 2011 for depression was 20%, 17% for anxiety and 25% for mental health problems.[24] Similarly a study from Turkey showed that psychological test scores on the General Health Questionnaire (GHQ), the Spielberger State–Trait Anxiety Inventory (STAI) and the Beck Depression Inventory (BDI) rose significantly in medical students between the first and second years.[25] But our study showed that anxiety symptoms had significantly reduced after one year among newly joined students. That might be due to their previous wrong perception about the medical college academic curriculum like vast syllabus which they find it easy after joining the medical college. Students who displayed low and extremely low anxiety atbaseline continued to show similar score on severity of SCAT scale and their numbers have significantly increased after one year of follow up. That might be due to good and friendly support from teachers and senior students with their academic curriculum as well as their effective coping skills. However, at baseline, male and female students who displayed extremely high anxiety and high anxiety on severity of SCAT scale are continue to show high score after one year. That might be due to study related factors like rural, non-English background, total number of study hours per week, personal factors like recent stressful life events, worries about their own health and anxious symptoms that might have persisted before joining the medical college, because to get an admission to a medical college creates anxiety among parents and children regarding its entrance examination and financial burden associated with it which might have lead them to adopt ineffective coping strategies to overcome the stress. But their number have significantly reduced.

Limitations and Suggestions

Among limitations of the study, we measured only anxiety while other psychological parameters should be evaluated. So, in future, further long term follows up study should be planned in order to address these negative emotional and psychological symptoms in the form of – relaxation techniques, workshop on stress management, yoga, counselling of students and their effectiveness in subsequent follow up.

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Original Article

Pattern of substance use and the socio-demographic variables among urban adolescents: A hospital-based study

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ABSTRACT

Background: *Adolescence is the period of transition at cognitive, emotional, physiological levels.In presence of multiple concomitant risk factors at Individual, familial, social and community levels, it may lead to early initiation of substance use, which are needed to be identified at the earliest.* ***Aim & Objectives:*** *1) Assessment of the pattern of substance use amongurban adolescents attending Psychiatry Out-patient Department of the Government General Hospital in Delhi. 2) Assessment of socio-demographic variables contributing to adolescent substance use.* ***Materials & Method:*** *This was a descriptive study including 50 consecutive patients aged between 10-19 years attending Psychiatry OPD and diagnosed with Mental and Behavioural disorders due to psychoactive substance use according to ICD-10 criteria. Data was collected via face–to-face interview with the patient and the informant using a semi-structured questionnaire.* ***Results:*** *All patients belonged to urban areas with majority being males, belonging to nuclear family. The mean age of patients was 16.46 years. Commonest gateway drug as well as substance used was nicotine (n=30,60%) followed by cannabinoids (n=30,60%) opioids (n=24,48%), alcohol (n=8, 16%), inhalants (n=6,12%) benzodiazepines (n=1, 2%), Polysubstance users (n=21, 42%). All being dependent users. Reported Peer pressure (98%) being the commonest reason for substance use initiation. 52% patients were school-dropouts, 42% studied in Government Schools. Family history of substance use was positive in 46% patients, with 10% reporting history of childhood abuse. 22% had psychiatric and 6% had medical comorbidities.* ***Conclusion:*** *The knowledge about socio-demographic variables and pattern of substance use amongst adolescents may be put to utmost use in making preventive strategies.*

Keywords: *Adolescents, Substance abuse, Pattern, Urban, Delhi*

Introduction

Adolescence is a unique stage of development characterized by puberty and physiological changes, Separation/Individuation,[2] Identity formation and Autonomy,[3] Cognitive Development (Formal Operational Thinking),[4] shift from parental/family authority to peer group authority, transition and transformation leading to the road to adulthood. Substance use disorders (SUDs) are amongst the most prevalent Psychiatric disorders in adolescent age group.[5] According to WHO, "Adolescence age group ranges from 10 till 19 years, the transitional phase between childhood and adulthood". Adolescent substance use is ever increasing in India[6]. Substance use is a multi-factorial disorder with multiple individual, familial and social variables acting as risk factors. Children and adolescents in Delhi are exposed to multi-lingual, multi-cultural

society and are mostly migrants from other states. The population mostly visiting our hospital belongs to lower socio-economic strata. Risk factors in this population are present at community, school, family, peer and individual levels and pose a great threat for the person in the formative years.

Objectives

1. Assessment of the pattern of substance use among adolescents attending Psychiatry Out-patient Department of the Government general hospital situated in North Delhi.
2. Assessment of socio-demographic variables like age, gender, locality of the above population, family history, family type, both parents working, peer-pressure, domestic violence, schooling, whether ever incarcerated.

Methodology

This is a descriptive study that included 50 consecutive patients between 10 to 19 years attending Psychiatry OPD in the Government general hospital of North Delhi over 4 months' period and diagnosed with Mental and Behavioral Disorders due to psychoactive substance use on the basis of ICD-10 Criteria. Patients were enrolled in the study after taking informed consent from them and their care-givers and in case of minors their assent was taken alongwith the informed consent of caregivers and/or guardians after being properly explained in their own language regarding the purpose of the study.

Inclusion criteria:

All adolescents with Mental and behavioral disorders due to psychoactive substance use as per ICD-10 Criteria included and who have been using substance currently in the preceding 6 months.

Exclusion criteria:

Adolescents not reporting any substance use in the preceding 6 months period.

Tools:

A semi-structured proforma comprising of socio-demographic data (name, age, gender, address, school, family type, parents, parental work), source of referral, substance pattern, family history of Psychiatric disorder, family type, H/O abuse (physical, sexual, emotional or domestic violence), peer pressure whether present or not for initiating substance use was used, gateway drug, substance used.

Results

All patients belonged to urban areas. Almost all patients (98%) belonged to nuclear families. Both parents were alive of maximum patients (88%), only 5 had single parent and one was orphan. Both parents were working in case of 13 patients. Single parent (mother) of all 5 patients were working. The mean age of patients was 16.46 years.

Table-1: Demographic characteristics of study patients

		Number of Patients
Gender	Male	49 (98%)
	Female	1 (2%)
Family Type	Nuclear	49 (98%)
	Joint	1 (2%)
Peer Pressure	Present	49 (98%)
	Absent	1 (2%)
Childhood Violence	Present	5 (10%)
	Absent	45 (90%)
School	Government	21 (42%)
	Private	3 (6%)
	Drop-out	26 (52%)
Incarceration	Present	4 (8%)
	Absent	46 (92%)
Parents	Single	5 (10%)
	Orphan	1 (2%)
	Both	44 (88%)
Employed	Self-Employed	28 (56%)
	Student	22 (44%)
Education	10 + 2	3 (6%)
	10th	17 (34%)
	9th	5 (10%)
	8th	8 (16%)
	7th	6 (12%)
	6th	2 (4%)
	5th	8 (16%)
	4th	1 (2%)
Age Distribution	10 Year	2 (4%)
	11 Year	0
	12 Year	1 (2%)
	13 Year	1 (2%)
	14 Year	0
	15 Year	8 (16%)
	16 Year	8 (16%)
	17 Year	15 (30%)
	18 Year	10 (20%)
	19 Year	5 (10%
Psychiatric Comorbidities	Present	11 (22%)
Medical Comorbidities	Present	3 (6%)

Table-2: Pattern of Substances

Pattern of Substances	Substance	Number of Patients
Gateway Drug	Nicotine	43 (86%)
	Opioid	4 (8%)
	Inhalant	1 (2%)
	Alcohol	1 (2%)
	Cannabis	1 (2%)
Substance	Nicotine (N)	30 (60%)
	Cannabis (C)	30 (60%)
	Opioids (O)	24 (48%)
	Alcohol (A)	8 (16%)
	Toluene (T)	6 (12%)
	Benzodiazepine (B)	1 (2%)
Substance Combination	Only Nicotine	5 (10%)
	Only Cannabis	4 (8%)
	Only Opioids	8 (16%)
	C + N	7 (14%)
	C + N + A	2 (4%)
	C + A	1 (2%)
	C + N + T	4 (8%)
	N + A	3 (6%)
	C + N + A + O + T	1 (2%)
	O + C + N	6 (12%)
	O + N	3 (6%)
	O + A + N	1 (2%)
	O + C	1 (2%)
	O + C + B	1 (2%)
	O + C + T	1 (2%)
	O + C + IVDU	1 (2%)
	O + C + N + IVDU	1 (2%)

Mean duration for which drug use was 2.5 years. Smoking was the route used by the most. Most common substance used were nicotine (n = 30, 60%), cannabinoids (n = 30, 60%) opioids (n = 24, 48%), Alcohol 16% (8) and then inhalants (n = 6, 12%), Benzodiazepines (1, 2%). 42% (n = 21) were polysubstance users mostly using two substances with or without nicotine. All patients fulfilled ICD -10 Criteria for substance dependence syndrome. They used cannabis and opioids more than two times per day. Alcohol intake was frequent with narrowing of repertoire, craving, tolerance and even with withdrawal signs. Nicotine with tobacco more than twice a day, cigarettes and bidis more than 2 per day. They all manifested some difficulties in carrying out daily activities when suddenly stopped the intake of drugs.

Reported Peer pressure (n = 49, 98%) was identified as the most common reason for initiation of substance use. 52% (n = 26) patients were school-dropouts, 42% (n = 21) studied in Government Schools, 6% (n = 3) studied in Private Schools. Family history of substance use was positive in 46% (n = 23) patients. 10% (n = 5) had history of childhood abuse.

Discussion

Adolescents (from Latin *adolescere*), meaning 'to grow up' is a transitional stage of physical and psychological development that occurs during the period from puberty to legal adulthood (age of majority).

All participants belonged to urban areas. As per Juyal et al,[7] in a study on intercollege students, urban 37.9% were in majority than rural 24.4%. Urbanization is a broad and complex concept, comprising several cultural and attitudinal shifts in a society. Both as a process and environment, urbanization seems to affect mental health and substance abuse because of increased stressors and reduced social support.[8] Most of the people living in urban areas are migrants and have settled in urban areas away from their roots to make a living. The pressure to adapt and adopt urban living and to bear the brunt of insecurities (both social and financial) are palpable in adolescents and youths of the family and sometimes to cope up with them, they resort to substance use as a way of living.

Almost all (98%) participants belonged to nuclear families. This is a pointer of the fact that the earlier practice of staying together with parents and grand-parents was a boon, blessing (shock-absorbers and guides). Maximum patients had both parents alive (88%), only 5 had single parent and one was orphan. On enquiry it was found out that supervision on their wards was not adequate in most of them either because of them being daily wage earners, lack of education in parents or the constant lying of the wards to elders.

Maximum adolescents were school-drop-outs (26, 52%), most of them studied in government schools (21, 42%) and only three (6%) were from Private Schools. Reasons for school drop-outsgiven were varied ranging from socio-economic status, poor motivation at individual level and social and familial unsupportiveness, illiteracy in family. Presence of substance use in Government school students gives a glimpse of a gloomy picture of lack of proper supervision, discipline and sensitization regarding adolescent substance use in government

schools but biases cannot be denied as patients going to private school were only 3 and real scenario of private schools and actual reasons of perpetuation of substance use in government schools were difficult to be ascertained due to limitation of set-up and informant available. Implementation of School mental health scheme in all Government Schools as proposed by the Government is very much needed.[9] The lack of proper intervention at family, school and society levels for dealing with and preventing school drop-outs and their failure in re-integration is a vexing issue leading to substance use disorder perpetuation. As per Saxena et al,[10] study on 511 Government school going students of 14-19 years in Dehradun, 46.9% accepted substance whereas as per multi-centric study done in collaboration with National Drug Dependence and Treatment Centre AIIMS (NDDTC, AIIMS) and National Commission for Protection of Child Rights (NCPCR) by Dhawan et. al,[11] 55% were school-drop-outs.

Almost all patients (49) were boys and only one was girl which signifies the high prevalence of substance use in male gender. Meta-analyses by Reddy and Chandrashekhar[12] substance use prevalence rates in males was 11.9% and 1.7% in females. There is rising trend of substance use in females in India[13] but very few seek treatment and is found to be more prevalent in elderly. Our study included only adolescents coming to hospital which may be providing incomplete picture of the real scenario. It may be reflection of age-long patriarch social structure of males associated with outside exposure and opportunities of social learning.

Maximum patients belonged to age 17 years,[15] 18 years[10] and 15 years,[8] 16 years[8] pointing to its prevalence in advanced ages. History of childhood violence in the form of physical abuse, emotional, sexual and even witnessing domestic violence was reported in only 10% patients which is in contrast to findings of earlier studies. As per study conducted by Dhawan et. al.[11] reported 46.6% to witness family fights and 45.3% being abused by family.

Family history in first and second degree relatives was found to be positive in 23 (46%) patients which also signifies the heritability of substance use disorders and regarding other psychosocial factors like parenting practices, availability, acceptability in families. As per Saxena et. al.[10] 58.3% family members indulged in substance use. The well-documented Type 2 alcoholism is severe kind of alcoholism, found in younger age group with genetic-loading by Cloninger.[14] Although Alcoholism was found in just 16% of patients and nicotine (60%) (only nicotine use in 10%), cannabis (30%) (only cannabis in 8%) and opioids (48%) (only opioids in 16%), combination of more than one (in 66% patients) were more commonly found in our study sample. This may be because of social acceptability of alcoholism and might be perceived to be normal leading to less number of treatment seekers in the hospital unless the problem becomes severe enough with marked medical and social consequences.

Peer-pressure was reported in 98% of patients who attributed it as a prime reason for initiation and maintenance of drug use. This fact even emphasized by earlier studies Chowdhary et. al.[15] and Dhawan et. al.[11] Study showed 82.4 % having close contacts with friends using substances, and 42.2% experiencing peer-pressure. Both socialisation and selection appear to provide important influence on adolescent substance use. The deep need of belonging and acceptance in the peer group pushes them in quagmire of drugs.

Psychiatric comorbidities were found in 11 (22%) patients who were already diagnosed or had overt psychiatric symptoms. 5 patients had history suggestive of conduct disorder, 2 patients had Bipolar Affective disorder, one had major depressive disorder, 1 had anxiety disorder and two had Schizophrenia. Patients with Bipolar Disorder had intake of substance mostly during the symptomatic manic phase. Patients having major depression and anxiety disorder used substance use for coping and even for self-medication of their anxiety and low mood symptoms. Patients suffering from schizophrenia reportedly used to self-medicate their psychotic symptoms with substance and even had reported increase intake after the start of antipsychotic. It is well-documented in various literatures that mental health issues are present prior or concomitant or subsequent to substance use (may be pre-disposing, precipitating or perpetuating factors) and in drug user's psychiatric comorbidities are common.[16]

Medical comorbidities were found in 3 (6%) patients, one patient was suffering from seizure disorder, one from HIV, one from HCV which got

recently detected. Routes of transmission was via unsafe needle exchange as both the patients were IV drug users and admitted to sharing needles with friends on few occasions. As per the study findings by Sarlin Eric et. al.[17] Patients with substance use disorders are associated with greater 10-year mortality risk (i.e. a greater disease burden) than demographically matched patients without substance use disorders (SUDs).

Nicotine (60%) was the most common substance of use as well as drug of initiation, used singly as well as along with other substances which points out the fact of nicotine being the gateway for start of abuse and subsequent addition of more harmful substances with the passage of time. Similar findings corroborated by earlier studies. Bansal et. al.[18] on 300 street child laborers in Surat, the India Global Youth Tobacco Survey[19] 2006 14.1% currently use any tobacco products, 4.2% students smoke and 11.9% use smokeless tobacco, National Family Health Survey 2 and 3[20,21] (2000-2001, 2005-2006, reporting tobacco prevalence as high as 55.8%). Nicotine being easily available, accepted in society as common pastime and as way of socialization, family members using without any qualms and inhibition, justifying its use for common problems of tooth-ache, constipation, boredom, anxiety, tension etc. can be implicated in its high usage among adolescents. Cannabis, opioids, alcohol, toluene and benzodiazepine use were reported in adolescents in descending order. Polysubstance use (use of two or more substances besides nicotine) was reported in 42% of subjects (Sarangi et. al.[22] multiple substance use 3.34 substance abused/adolescent urban slum adolescents in Sambalpur).

All patients were dependent users using cannabis and opioids more than two times per day. They all manifested some significant physical, psychological difficulties in carrying out daily activities when suddenly stopped the intake of drugs. In the Dhawan A et. al.[11] study craving was reported in 49.1% and withdrawal signs in 19.3%, 53.3% had experienced intoxication with impaired performance.

Limitation of study are small sample size, recall bias, observer bias,only current users included not the lifetime users and availability of no or just a few informants leading to inaccuracy in data available.

Conclusion

Children and adolescent substance use is a huge burning multifactorial problem. Risk factors may be present at Individual, family, Community and National levels. Early identification of risk factors may lead to the prevention of perpetuation of substance use in adulthood and other comorbidities and would facilitate their targeted intervention. This study is a modest effort to highlight the various socio-demographic variables associated with early substance use in the urban population of lower socio-economic strata of Delhi. More Indian epidemiologic studies with bigger sample size and even highlighting pre and post-intervention differences could be of immense value. Comprehensive preventive strategies with proper implementation of School mental health schemes would ensure mental well-being at school. Strict implementation of already existing Acts and Rules (like Narcotic Drugs and Psychotropic Substances Act 1985 (NDPSA), Cigarette and other Tobacco Products Act, (COTPA) 2003, amendment bill 2015) at State and National levels is the need of the hour.

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Original Article

To understand Personality Characteristics of the Substance abusers and its Contribution to the Addictive nature

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ABSTRACT

Background: *Among the various features associated with substance use disorders, personality is recognized as one of the important factors in the etiology of development of substance dependence disorders.* ***Aims:*** *To understand personality characteristics of the substance abusers & its contribution to the addictive nature.* ***Materials and Methods:*** *A total number of 70 patients who were having either alcohol (N=35) and opioid (N=35) dependence and 35 healthy controls, were evaluated on 16 PF Questionnaire developed by Cattell.* ***Results:*** *Compared to healthy controls, patients with opioid dependent had significantly lower emotional stability and tendency to easily get upset. Patients with opioid dependence also differed significantly from healthy controls in terms of having a tendency to evade rules (weaker super ego strength) and had high impulsive tension. Compared to healthy controls, patients with alcohol dependent patients had low intellectual ability and inability to rationalize and low frustration tolerance. Compared to healthy controls, patients with alcohol dependence had traits of being tender minded, dependent, sensitive, a tendency of suspiciousness and higher impulsive tension.* ***Conclusion:*** *This study suggests personality traits possibly influence the choice of substance of abuse.*

Key words: *Personality traits, Alcohol dependence, Opioids.*

Introduction

Among the various features associated with substance use disorders, personality is recognized as one of the important factors in the etiology of development of substance dependence disorders.[1] Personality has been conceptualized differently by different group of researchers. Most of the substance use disorders start in the adolescents. This is attributed to the immature personality traits and inadequate development of value system, novelty seeking and unfavorable self image, characterized by lack of self-confidence and inferiority complex.[2-6] Anxious person uses substances in order to escape their state of acute and grave psychological suffering. Children whom nothing was ever refused are at risk of developing hedonistic personality and which is closely associated with higher risk factor for drug consumption. One of the most popular models of personality is a five factor model, which includes the 5 big factors, viz., neuroticism, extroversion, openness to experience, conscientiousness and agreeableness. Among these factors, high score on extraversion domain indicates that substance abusers are assertive, impulsive, prone to risk taking behavior and more aggressive than the non-substance abusers.[2-4]

Although previous studies from India have evaluated different aspects of drug dependence, little is known about the personality structure of persons who develop drug dependence. Accordingly, the present study aimed to evaluate the personality

characteristics of the substance abusers and their influence on the selection or type of substance used.

Materials and Methods

The present study included patients who were dependent on either alcohol (N=35) or opioids (N=35), as per the ICD-10 criteria. These patients were compared with a healthy control group, which comprised of 35 subjects who were not dependent on any substance. To be included in the study, the participants were required to be in the age group of 18-60 years of age. Patients who fulfilled the selection criteria of substance dependence as per ICD-10 and provided written informed consent were included.

Personality was evaluated by using 16PF Questionnaire developed by Cattell, which is a multiple choice personality questionnaire, easy to administer requiring approx 50 minutes.

The collected data was analyzed using t-test for unequal variances and conclusions were withdrawn.

Results

The mean age of participants in the alcohol dependence group was 34.14 (SD: 9.61) years, that of opioid dependence group was 32.57 (SD: 9.14) and that of healthy control group was 35.54 (SD: 10.89) years. There was no significant difference between the 3 groups, reflects homogenous distribution as depicted in Table 1.

Table-1: Age wise distribution of subjects

Age group	Alcoholics	Opioids	Normal
18-25	8	11	8
26-35	12	13	10
36-45	10	6	10
46-60	5	5	7
Mean (SD)	34.14 (9.61)	32.57 (9.14)	35.54 (10.89)
t-value	0.49 (NS)	0.22 (NS)	0.57 (NS)

Compared to healthy controls, patients with opioid dependent had significantly low score on the C factor which represents lower emotional stability and tendency to easily get upset. Patients with opioid dependence also differed significantly from healthy controls on G factor which indicates that these subjects have a tendency to evade rules (weaker super ego strength). They also scored high on Q4 factor which indicates high impulsive tension. These results are depicted in Table 2.

As shown in Table 3, compared to controls, patients with alcohol dependent patients had low score on factor B and C which represent low intellectual ability and inability to rationalize and low frustration tolerance. They also had significantly higher scores on L and M factors, which suggest that these patients are tender minded, dependent, sensitive and have a tendency of suspiciousness. They also had high scores on Q4 factor which represent high impulsive tension without any obvious reasons. When those with alcohol and opioid dependence were compared significant differences

Table-2: Comparison of personality traits of patients with Opioid dependence and Control group

Factors	Personality Characteristics	t-value	df	p- value (<0.05)	Results
A	Extro version and Introversion Tendencies	1.823	37.59	0.08	No significant difference
B	Intelligence Utility	0.796	36.92	0.43	No significant difference
C	Emotional Strength and Reactivity	-2.295	33.51	0.03	Significant difference
E	Submissive versus Assertive Traits	0.589	37.87	0.56	No significant difference
F	Surgency Versus Desergency Traits	0.938	36.94	0.35	No significant difference
G	Superego Strengths	1.620	33.31	0.11	No significant difference
H	Shy versus Spontaneous Traits	0.498	37.72	0.62	No significant difference
I	Independent versus dependent Traits	-3.484	34.83	0	Significant difference
L	Trusting Versus Suspicious Traits	0.353	37.73	0.73	No significant difference
M	Practical versus Imaginative Traits	-1.038	37.89	0.31	No significant difference
N	Sentimental versus Shrewd Traits	-1.641	36.02	0.11	No significant difference
O	Confidence versus Worrying Traits	3.548	37.93	0	Significant difference
Q1	Conservative versus Experimenting Traits	1.596	37.98	0.12	No significant difference
Q2	Group Dependance versus Self Sufficiency	-2.129	37.7	0.04	Significant difference
Q3	Undesciplined Self Confidence versus Socially Precise Traits	-0.897	37.99	0.38	No significant difference
Q4	Relaxed versus High Ergic Tension	4.774	35.34	0	Significant difference

Table-3: Comparison of personality traits of patients with alcohol dependence and Control group

Factors	Personality characteristics	t-value	df	p- value (<0.05)	Results
A	Extro version and Introversion Tendencies	-2.564	36.78	0.015	Significant difference
B	Intelligence Utility	1.100	37.36	0.278	No significant difference
C	Emotional Strength and Reactivity	2.110	31.89	0.043	Significant difference
E	Submissive versus Assertive Traits	-2.339	29.3	0.026	Significant difference
F	Surgency versus Desergency Traits	-1.761	34.93	0.087	No significant difference
G	Superego Strengths	-0.733	34.25	0.468	No significant difference
H	Shy versus Spontaneous Traits	0.143	37.95	0.887	No significant difference
I	Independent versus Dependent Traits	1.892	33.51	0.067	No significant difference
L	Trusting versus Suspicious Traits	-5.628	33.04	0	Significant difference
M	Practical versus Imaginative Traits	-7.644	26.73	0	Significant difference
N	Sentimental versus Shrewd Traits	-0.273	36.12	0.787	No significant difference
O	Confidence versus Worrying Traits	-6.126	35.38	0	Significant difference
Q1	Conservative versus Experimenting Traits	-1.701	37.58	0.097	No significant difference
Q2	Group Dependance versus Self Sufficiency	-0.499	33.24	0.621	No significant difference
Q3	Undesciplined Self Confidence versus Socially Precise Traits	1.279	37.27	0.209	No significant difference
Q4	Relaxed versus High Ergic Tension	-9.079	37.87	0	Significant difference

Table-4: Comparison of personality traits of patients with alcohol and opioid dependence

Factors	Personality characteristics	t-value	df	p-value (<0.05)	Results
A	Extro version and Introversion Tendencies	-0.720	37.77	0.476	No significant difference
B	Intelligence Utility	1.763	37.94	0.086	No significant difference
C	Emotional Strength and Reactivity	-0.312	37.72	0.757	No significant difference
E	Submissive versus Assertive Traits	-1.700	30.33	0.099	No significant difference
F	Surgency versus Desergency Traits	-0.858	37.34	0.396	No significant difference
G	Superego Strengths	0.796	37.9	0.431	No significant difference
H	Shy versus Spontaneous Traits	0.627	37.9	0.534	No significant difference
I	Independent versus Dependent Traits	-2.028	37.8	0.05	No significant difference
L	Trusting versus Suspicious Traits	-5.539	34.61	0	Significant difference
M	Practical versus Imaginative Traits	-8.625	26.01	0	Significant difference
N	Sentimental versus Shrewd Traits	-2.181	38	0.035	Significant difference
O	Confidence versus Worrying Traits	-1.981	34.64	0.056	No significant difference
Q1	Conservative versus Experimenting Traits	-0.170	37.76	0.866	No significant difference
Q2	Group Dependance Versus Self Sufficiency	-3.073	34.88	0.004	Significant difference
Q3	Undesciplined Self Confidence versus Socially Precise Traits	0.313	37.15	0.756	No significant difference
Q4	Relaxed versus High Ergic Tension	-3.127	36.25	0.003	Significant difference

were noted in terms trusting versus suspicious traits, practical versus imaginative traits, sentimental versus shrewd traits, group dependence versus self-sufficiency and relaxed versus highergic tension Table 4.

Discussion

Present study suggests that patients with alcohol and opioid dependence differ significantly on some of the personality traits from those who are not dependent on these substances. Further findings of the present study suggest that patients with opioid dependence and alcohol dependence also differ on various personality features. Present study suggest that compared to healthy controls, subjects with alcohol and opioid dependence, are more assertive, excited, aggressive, impulsive, indulge in increased risk taking behavior. These findings are supported by existing literature.[3,4,7,8] Accordingly, it can be said that these personality traits possibly influence the onset of addictive behaviour. Existing data suggest that features like novelty seeking (Impulsive, Excitable, Exploratoty, Fickle, Disinhibited), reward dependence (Ambitious, Moody, Industrious) and harm avoidance (Apprehension, Fatiguable, Inhibited, Sensitive to punishment) predicts alcohol and other substance abuser and problems.[12-16] Our study is also reflecting same

findings.

Findings of the present study also suggest that compared to patients having opioid dependence, patients with alcohol dependence are more imaginative, more confident, wrapped up in inner urgencies and are careless of practical matters. Further, compared to subjects with opioid dependence, patients with alcohol dependence are more tense, frustrated, suspicious and self opinionated than opioid addicts while opioid addicts are more group dependent, sentimental and poor decision makers. These findings are also supported by findings by the existing literature.[9-11] These findings further suggest that personality features do influence the selection of substance of abuse.

The present study is limited by small sample size and cross-sectional assessment. Assessment of personality was limited to a single questionnaire, rather than using a detailed interview schedule.

To conclude, the present study suggests that personality features play an important role in genesis and possible maintenance of substance use disorders. Accordingly, clinicians managing these patients should always focus on assessment of personality and addressing the problematic traits. This possibly can influence the treatment outcomes in the long run.

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Original Article

Parental Handling Measures Among Physically Challenged Children and Normal Children: A Comparative Study

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ABSTRACT

Background: *Parental handling is a critical aspect of the parent-child relationship and several factors may influence the parental handling measures adopted. Among them are factors such as stress,which is critically enhanced when the child is dealing with a disability.* ***Aim:*** *This paper empirically studies the differences in level of parental care and control for physically challenged children and normal children under different scenarios.* ***Methods and Materials:*** *Based on a questionnaire-cum-structured interview method, data was collected using a Parental Handling Questionnaire for 120 children at JNMC, Aligarh. Mann-Whitney 'U' and Kruskal-Wallis tests were used depending on applicability.* ***Results and Conclusions:*** *The results of the paper shows that there is a significant difference (at 0.1 significance level) in parental handling measures (parental control) for physically challenged children and normal children. Both parental care and control are insignificant towards type of physical disability and age is a significant factor in parental handling for physically challenged children.*

Key Words: *Parental care, Parental control, Disability, Physically challenged children.*

Introduction

Parental handling is one of the most influential and challenging aspects of a relationship between a parent and his or her child and based on the type of parenting, it can be classified into different measures such as parental care-parental control, authoritative-authoritarian etc. The importance of parental handling measures can be seen in its impact on the behaviour and performance of children. Research suggests that a strong parent-child connectedness improves the child's academic outcome, self-esteem, mental health and has protective effects towards the likelihood of drug use etc.[1] However, apart from the intrinsic factors; parental handling can be affected by external factors as well. For example, one of the factors that affect parenting behaviour towards offspring is stress. Parenting stress can be defined as the excess tension and anxiety caused in regard to the duties of a parent and the parent-child interactions.[2] Previous studies suggest that parental stress is higher in case of physically challenged children.[3,4] Higher levels of chronic sorrow and lower levels of support received are characteristics associated with parents having physically challenged children, which in turn can also be related to the behaviour problems and socio-emotional problems in their children.[3,4] Often, parental behaviour can depend based on a range of emotions such as guilt, blame, despair, denial, anger, and frustration which may affect parents as they are confronted by the issues associated with their child's disability.

Additionally, parental handling also changes based on the specific requirements of the children.

It is clear that the demands of taking care of children affected with disability are different from that of normal children.[5] Hence, based on these factors, parental handling measures are anticipated to be different for physically challenged children as compared to normal children.

Apart from this, the type of physically challenging condition is among indicators of the burdens that parents may go through.[6] Furthermore, even within physically challenged children, other factors such as the age,[7] gender,[8,9] and number of siblings etc. could have an influence on parental handling. Therefore, it is important to consider the type of physical disability and other background factors while discussing the differences in the parental handling measures between physically challenged children and normal children.

Previous literature in the field has focused on topics such as parental behaviour and parenting techniques adopted for physically challenged children. However, there hasn't been enough attention given to the differences between parenting aspects such as care and control for physically challenged children and normal children that come as a result of the different challenges faced by parents in each scenario. This paper, while adding to the existing literature in the field, also offers a different perspective on the parenting of physically challenged children, particularly in adeveloping society such as India.

Aim: This paper empirically studies the differences in level of parental care and control for physically challenged children and normal children under different scenarios

Hypotheses

Based on previous literature, the following hypotheses can be defined:

1. Parental handling measures will be significantly different between physically challenged children and normal children.
2. Parental handling measures would be significantly associated with the type of physical disability.
3. Parental handling measures for physically challenged would be significantly associated with the following variables:
   3.1: Age
   3.2: Gender
   3.3: Type of family (nuclear or joint)
   3.4: Domicile (urban or rural)
   3.5: Number of siblings

Materials and Methods

This motivation-qualitative research was conducted during one year period from November, 2016 to November, 2017. Deliberate random sampling was used to select the sample area (Jawaharlal Nehru Medical Hospital, Aligarh) using different physically challenged departments (Oto-laryngology, Ophthalmology, Orthopaedics) at the Jawaharlal Nehru Medical Hospital. The size of the sample was 90 physically challenged children (30 orthopedically challenged, 30 visually challenged, and 30 hearing-challenged children) and 30 normal children, all aged between 6 and 12 years. All samples were children who visited the OPD of the hospital over a one year period. The data was collected using the help of in-house psychiatrists. Questionnaire cum structured interview method were adopted for the present study and the scale on which the data was collected is The Parental Handling Questionnaire.[10]

The questionnaire can be divided into parental care and control, defining the extent to which care is provided or control is enforced by a parent respectively. The Questionnaire consists of 14 items on Parental Care and Parental Control. The first variable comprises of 10-items and measures psychological nurturance/care. The second variable comprises of 4 items measures psychological control/disciplining. Items are worked in a manner that elicited a response in terms of 'YES', 'SOMETIMES' or 'NO' to be rated as 0,1 and 2 respectively. The items are worded in such a fashion that the higher scores for both the variables indicates low levels of care as well as control. The items are rated on a three-point Likert scale giving a possible range of scores as 0-20 & 0-8 for care and control respectively. For both care and control, a total score can be calculated as a summation of the care and control components of the questionnaire. These scores are represented in the analysis with the variables P_{CARE} and $P_{CONTROL.}$

Additionally, data regarding the age, gender, type of family (nuclear or joint), domicile (urban or rural) and the number of siblings of the samples were collected.

The analysis has been done with the help of the software IBM SPSS using Mann-Whitney U-test and Kruskal-Wallis test as methods for analysing the data depending on suitability.

Results and Discussion

From Table 1, it is seen that parental control (p-value: 0.091) levels are significantly different for physically challenged children as well as normal children at 0.1 signifiance level. Higher parental control scores are found among physically challenged children ($P_{CONTROL}$: 63.46). This is understandable as the level of parental control associated with physically challenged children are expected to be lower than that of normal children as the limitations faced by them decrease the level of control parents would need to have. The parental care scores are not significantly different. However, it can be seen that normal children are found to have a higher score of parental care (P_{CARE} : 69.23) indicating that physically challenged children experience a higher level of parental care. This finding is also backed up by existing literature.[11]

Based on these findings, it can be concluded that parental handling measures (i.e. parental control) are significantly different for physically challenged children and normal children. Hence, hypothesis, 1Ho, is accepted.

Table 2 reveals that both parental care and parental control are not significantly affected by the type of physical disability of the child. Among the disabilities, it is found that Hearing challenged children see the lowest levels of parental care (P_{CARE} score: 48.97) and orthopaedically challenged children see the lowest levels of parental control ($P_{CONTROL}$ score: 49.67).

Consequently the hypothesis, 2Ho, is rejected as parental handling measures (both care and control) are not significantly associated with the type of physical disability of children. Parents are expected.

To offer the same level of care or exert the same level of control irrespective of the type of disability as although the limitations associated with each type of disability is different, the level of difficulties caused due to the limitations are similar.Similar results have also been found in previous studies.[12]

Table 3 reveals the differences in parental handling measures for physically challenged children for different background factors. For comparative purposes, a similar analysis is done for normal children in Table.4. It is seen that only age is significantly associated with parental handling measures (i.e. parental care). Physically challenged children of a higher age group (9-12 years, P_{CARE}

Table-1: Difference in parental care and parental control between the two groups

		P_{CARE}			$P_{CONTROL}$		
Groups	**N**	**Mean Rank**	**Mann-Whitney (U)**	**p-value**	**Mean Rank**	**Mann-Whitney (U)**	**p-value**
Physically Challenged	90	57.59	1088	0.108	63.46	1084*	0.091
Normal Children	30	69.23			51.63		

Significant at: *0.1, **0.05, ***0.01 significance levels
2-tailed Significance

Table-2: Difference in parental care and parental control between categories of physically challenged children

		P_{CARE}			$P_{CONTROL}$		
Groups	**N**	**Mean Rank**	**Chi-square**	**p-value**	**Mean Rank**	**Chi-square**	**p-value**
Visual	30	43.15	0.853	0.653	47.75	3.135	0.209
Hearing	30	48.97			39.08		
Orthopaedic	30	44.38			49.67		

Significant at: *0.1, **0.05, ***0.01 significance levels
2-tailed Significance

Table-3: Parental care and parental control in different background factors for physically challenged children (N=90)

			P_{CARE}			$P_{CONTROL}$		
Independent variable	**Groups**	**N**	**Mean Rank**	**Mann-Whitney (U)+**	**p-value**	**Mean Rank**	**Mann-Whitney (U)+**	**p-value**
Age *(years)*	6-9	41	36.63	600***	0.001	42.70	889.5	0.324
	9-12	49	53.76			47.85		
Gender	Male	53	48.92	79.00	0.130	42.89	842	0.229
	Female	37	40.59			49.24		
Type of family	Nuclear	49	47.19	921.5	0.499	44.29	945	0.610
	Joint	41	43.48			46.95		
Domicile	Urban	42	49.17	854	0.205	42.39	877.5	0.264
	Rural	48	42.29			48.22		
Number of siblings	0	3	43.17	0.273	0.965	25.33	2.590	0.459
	1	27	43.61			48.89		
	2	36	46.11			44.40		
	3 or more	24	47.00			45.85		

Significant at: *0.1, **0.05, ***0.01 significance levels
2-tailed Significance
+ Chi square values for the variable, "Number of siblings"

Table-4: Parental care and parental control in different background factors for normal children (N=30)

			P_{CARE}	$P_{CONTROL}$				
Independent variable	**Groups**	**N**	**Mean Rank**	**Mann-Whitney (U)+**	**p-value**	**Mean Rank**	**Mann-Whitney (U)+**	**p-value**
Age *(years)*	6-9	10	12.25	67.50	0.147	15.10	96.00	0.856
	9-12	20	17.13			15.70		
Gender	Male	16	18.13	70.00*	0.076	13.28	76.50	0.128
	Female	14	12.50			18.04		
Type of family	Nuclear	21	14.33	70.00	0.261	15.62	92.00	0.907
	Joint	9	18.22			15.22		
Domicile	Urban	13	15.77	107.0	0.882	16.23	101.0	0.682
	Rural	17	15.29			14.94		
Number of siblings	0	2	5.000	7.156*	0.067	16.75	4.096	0.251
	1	14	19.50			18.64		
	2	11	12.64			12.41		
	3 or more	3	14.33			11.33		

Significant at: *0.1, **0.05, ***0.01 significance levels
2-tailed Significance
+ Chi square values for the variable, "Number of siblings"

score: 53.76) receive significantly lower levels of parental care as compared to the younger age group (6-9 years, P_{CARE} score: 36.63). In comparison, the age does not have a significant association on parental handling measures for normal children. The main reasons for this is that, in general, younger children are more likely to be more cared for.[6] However, the more delicate the nature of the situation,as is in a child having a physical disability, makes it more likely for parents to provide higher

care towards them.This comparison shows that factors such as age play a more significant role in parental handling measures for physically challenged children as compared to normal children and is in line with previous literature on the topic.[13]

A possible explanation for the lack of significant results for parental control scores could be the already lower level of parental control for physically challenged children. The low level reduces the capability of parental control to be significantly differentiated in the factors (e.g. age, gender etc.) considered.

Based on these outcomes, only one of the elements of the final hypothesis, 3Ho is accepted (Age), the others are rejected.

Conclusion

Parental handling is an important aspect in the grooming and development of children and it is prone to be affected by various factors such as stress. Having disabled children increases the level of stress faced by parents and consequently affects their parenting behavior. This paper aimed at studying the differences in the parental handling measures adopted for physically challenged children and normal children.

Based on the samples collected from the Jawaharlal Nehru Medical College, Aligarh and the Parental Handling questionnaire, [10] the study found several conclusive pieces of evidence to suggest that parental handling measures are different for physically challenged children.

When compared to normal children. The paper adds to the existing literature on parental handling and behavior towards physically challenged children.

It was found that parental control, a measure of parental handling, is significantly higher for normal children than physically challenged children. Adding to that, it was found that the type of physical disability plays an insignificant role in the level of parental care or control for physically challenged children. Hearing challenged children were found to have the lowest levels of parental care and orthopaedically challenged children were found to have the lowest levels of parental control among the types of disability considered for this paper. The study also finds that factors such as age significantly influence parental care levels for physically challenged children, whilst these factors were found to be insignificant for normal children. Children who are younger in age and female children are associated with higher levels of parental care as compared to older children and male children.

The paper, however, has its limitations which also forms the scope for future academic work. Only three different types of physical disabilities have been considered in this study and the sample size is limited to the area of study. Expanding on these parameters will undoubtedly add to the results of the paper. Other parental handling measures and techniques apart from parental care and parental control exist and understanding the relative changes in such measures depending on whether it is a physically challenged child or a normal child can provide new insights into how parental handling is influenced by the physical disability of children. And finally, the outcome of parental handling is the positive or negative development of the child. It will be, therefore, interesting to see how different levels of parental handling measures are associated with the successful development of physically challenged children. The findings of the paper along with the findings of the suggested studies will have real-world applications for parents with physically challenged children and psychiatrists dealing with them. Ideal methods of parental handling measures specific to physically challenged children can be suggested for improving the development of such children.

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Original Article

To Assess and Compare the Depression and Psychosis in Patients following Caesarean Section and Vaginal Delivery

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ABSTRACT

Background: *The period since pregnancy to motherhood is often known to cause lot of stress. Most of the women manifest symptoms of anxiety, severe depressive symptomatology and at times with psychosis.* ***Aims:*** *To assess and Compare Depression and Psychosis in women following caesarean section and vaginal delivery.* ***Material &Methods****: Study was conducted in the Outdoor & Indoor Unit of Department of Obstetrics and Gynaecology, C.S.S. Hospital, a tertiary care centre attached to the Subharti Medical College, Meerut. Two groups were formed, group A consisted of subjects undergoing elective Caesarean Section and group B consisted of subjects undergoing vaginal delivery. Beck's Depression Inventory (BDI) and Brief Psychiatric Rating Scales (BPRS) were administered on the subjects four times (before delivery, immediately after delivery, 3 days after delivery and one month after delivery). After collecting data appropriate statistical tools were used.* ***Results &Conclusions:*** *When BDI and BPRS scores were compared between the two groups there was no significant difference between the group. Hence it can be concluded that mode of delivery does not have any impact on the occurrence of depression and Psychosis following the childbirth.*

Keywords- *Postnatal Depression, Vaginal delivery, Caesarean Section, Psychosis.*

Introduction

The transition from pregnancy to motherhood is frequently a source of stress. Significant percentage of women manifest symptoms of anxiety, depression and psychosis.[1] Depressive symptoms during pregnancy may have devastating consequences, not only for the women, but also for the child and family.[2]

The postnatal period is well established as an increased time of risk for the development of serious mood disorders. There are three common forms of postpartum affective illness: the blues (baby blues, maternity blues), postpartum (or postnatal) depression and puerperal (postpartum or postnatal) psychosis, each of which differs in its prevalence, clinical presentation, and management.[3]

Baby blues is a transient mood disturbance characterized by mood lability, sadness, dysphoria, subjective confusion and tearfulness.[4] Postpartum depression is characterized by a depressed mood, excessive anxiety, insomnia, and change in weight. The onset is generally within 12 weeks after delivery.[5] Several studies do indicate that an episode of postpartum depression increases the risk of lifetime episodes of major depression.[5]

Psychosis in the post-partum period is relatively rare. Only around one in every 1,000 women develops psychosis after delivery but it is dangerous for mother and child, with greater risk of self-harm and suicide.[6]

The symptoms of postpartum psychosis can often begin within days of the delivery, although the mean time to onset is within 2 to 3 weeks and almost always within 8 weeks of delivery, patients complain of fatigue, insomnia, and restlessness, suspiciousness, confusion, incoherence, irrational statements, hallucination and delusions and obsessive concerns about the baby's health and welfare may be present.[5] Mode of delivery is considered an important factor in maternal birth experience.[7] Women who delivered by caesarean section reported consistently more negative experiences than those who delivered vaginally.[8]

This study aims at assessing the depression and psychosis following the caesarean section and vaginal delivery, to compare them (depression and psychosis) between these mode of deliveries (Cesarian section and vaginal delivery).

Material and Methods

Study was conducted in the Outdoor & Indoor Unit of Department of Obstetrics and Gynaecology, C.S.S. Hospital, a tertiary care centre attached to the Subharti Medical College, Meerut. Before starting the study, approval of the Principal & Controller Medical College & ethical committee was taken. Two groups were formed, group A consisted of 50 subjects (Elective Caesarean Section), group B (vaginal delivery). Full term delivery subjects posted for Vaginal delivery and Elective Caesarean Section were included. Patients suffering from co-morbid major medical or surgical illness, substance abuse, co morbid psychiatric neurological illness before delivery, patients posted for emergency Caesarean section, unwilling and uncooperative patients were excluded. Informed consent was taken from two groups. Subjects in both groups were thoroughly evaluated on the semi-structured proforma.

Beck's Depression Inventory and Brief Psychiatric Rating Scales (BPRS) were administered on the subjects four times that is before delivery, immediately after delivery, 3 days after delivery (at the time of discharge) and one month after delivery.

BDI is a self-rating scale in which individual rate their own symptoms of depression. The BDI is 0-21 items scale which evaluates key symptoms of depression. In the present study, Hindi adoption of Lal et. al (1974) is used, since it was felt that Beck's Depression Inventory, being in English was unsuitable for our Hindi speaking population. Individuals are asked to rate themselves on a 0 to 3 spectrum with a score range of 0 to 63. A cut off 16 was kept as score 16 and above were used as clinical depression. A higher cutoff is required in pregnancy to detect clinical depression.[9,10]

The BPRS is a clinical rating scale widely used in psychiatric clinical practice. It is an 18-item scale measuring positive symptoms, general psychopathology and affective symptoms. BPRS items may be rated by the use of either a 1 to 7 or 0 to 6 scaling system, with the 1 or 0 rating indicating no pathology, respectively. When percent change in BPRS total score is used as an index of change, measurement considerations indicate that the 0 to 6 scaling system is preferable.[11]

Information so gained and data so collected were subjected to suitable statistical analysis (mean, standard deviation, t-test) using MicrosoftVersion 13and conclusions were drawn.

Results

Sociodemographic Profile

In the present study female undergoing vaginal delivery mean age was 22.94 ± 2.98 and females who underwent Caesarean section mean age was 23.68 ± 3.07. In both the groups (caesarean section & vaginal delivery) most of the females were Muslims (58%, 60%). Females from both groups were illiterate (vaginal section-36% and Caesarean section – 44%), unemployed (vaginal Section-82% and Caesarean section – 72%) belonged to upper lower class according to Kuppuswamy scale.

Assessment of Depression and Psychosis

In early postpartum period (immediately after delivery and 3 days after delivery) in caesarean group 6 (12%) out of 50 and 9(18.75%) out of 48 showed score above cut-off (above 16).[8,9] In late postpartum period (one month after delivery) 4 (9.5%) out of 42 showed score above cut-off.

In vaginal delivery group, 2(4%) out of 50 and 5(10.63%) out of 47 showed score above cut off in early postpartum period where as in late postpartum period 3(7.5%) out of 40 showed score above cut off.

Mean BDI scores of caesarean group, before delivery, immediately after delivery, 3 days after delivery and 1 month after delivery were 9.16, 9.86,

Table-1: No. of Subjects having scores above cut off in BDI Scale

Mode of delivery	Immediately after Deliveryn (%)	Total Patient No.	3 days after delivery No. (%)	Total patient No.	1 month after delivery No. (%)	Total patient No.
Cesarean Section	6 (12%)	50	9 (18.75%)	48*	4 (9.5%)	42**
Vaginal Delivery	2 (4%)	50	5 (10.63%)	47***	3 (7.5%)	40****

* - two subjects were lost to follow up as they were discharged early;
** - 8 subjects dropped off as they fail to come for follow up after one month;
*** - 3 subjects dropped off as discharged early during third assessment;
**** - 10 subjects dropped off at as they did not turn up forone month follow up.

Table-2: Mean and S.D. of BDI Scores in Caesarean Section and Vaginal Delivery

		Mean ± SD	
S. No.	Rating Scale	Cesarean Section	Vaginal Delivery
1	BDI - P0m	9.16 ± 5.03	8.38 ± 4.37
2	BDI - P1m	9.86 ± 5.05	8.14 ± 4.44
3	BDI - P2m	9.70 ± 6.20	7.14 ± 5.85
4	BDI - P3m	5.16 ± 6.32	4.85 ± 5.63

P0- Before delivery, P1- immediately after delivery, P2- 3 days after delivery, P3- 1-month after delivery)

Table-3. Comparison of BDI Score b/w Caesarean section and vaginal delivery by unpaired "t" test

S. No.	Rating Scale	Probability of unpaired "t" test b/w cesarean section and vaginal delivery	P – value/significance	
			P-value	Significance
1	BDI – P0m	0.410185	P > 0.01	NS
2	BDI-P1m	0.074154	P > 0.01	NS
3	BDI-P2m	0.041506	P > 0.01	NS
4	BDI- P3m	0.811247	P > 0.01	NS

P0 - Before delivery, P1- immediately after delivery, P2- 3 days after delivery, P3- 1 month after delivery)

Table-4: Mean and S.D. of BPRS Scores in Caesarean Section and Vaginal Delivery

		Mean ± SD	
S. No.	Rating Scale	Cesarean Section	Vaginal Delivery
1	BPRS - P0m	1.92 ± 1.322	1.98 ± 1.115
2	BPRS - P1m	1.92 ± 1.322	1.98 ± 1.115
3	BPRS - P2m	1.91 ± 1.234	1.978 ± 1.164
4	BPRS - P3m	1.761 ± 1.077	1.925 ± 1.227

(P0- Before delivery, P1- immediately after delivery, P2- 3 days after delivery, P3- 1 month after delivery)

9.70, 5.16 respectively. The corresponding figures in the vaginal delivery group were 8.38, 8.14, 7.14, 4.85 respectively.

It was found, that there is no statistically significant difference between the two group.

It can be observed that BPRS scores, before delivery, immediately after delivery, 3 days after delivery and 1 month after delivery in caesarean group were 1.92, 1.92, 1.91, 1.761 respectively. The corresponding figures in the vaginal delivery group were 1.98, 1.98, 1.978, and 1.925 respectively. None of subject from either group was rated high in BPRS Scale.

It was found, that there is no statistically

Table-5: Comparison of BPRS Scores b/w Cesarean section and vaginal delivery by unpaired "t" test

S. No.	Rating scale	Probability of unpaired "t" test b/w cesarean section and vaginal delivery	P – value/significance	
			P- value	Significance
1	BPRS – P0m	0.8068	P > 0.01	NS
2	BPRS – P1m	0.8068	P > 0.01	NS
3	BPRS – P2m	0.8039	P > 0.01	NS
4	BPRS – P3m	0.5252	P > 0.01	NS

significant difference between the two group.

Discussion

In Caesarean group, 3 days after delivery two subjects were lost to follow up as they were discharged early and 8 subjects dropped off as they fail to come for follow up after one month. Whereas in Normal delivery 3 subjects dropped off during third assessment and 10 subjects dropped off at one month follow up.

The BDI score at second & third assessment (immediately after delivery, 3 days after delivery) in both the groups (Cesarean section - 12%, 18.75% and Vaginal Section-4%, 10.63%) can more aptly be called maternity blue as they developed within 3 days of delivery [4]. Similar, results were reported in study done by Sood et al.[12] In western studies, 39-85% of new mother have been reported to have postpartum blues.[7] It is reported that blues are more common in the western societies where traditional support systems, transitional and prescribed rituals associated with childbirth are virtually lacking.

The prevalence of postpartum depression in cesarean section group and normal delivery group was 9.5% and 7.5% respectively. Nielson et al[13] mentioned prevalence of 8 to 15%. The study performed by Herick[14] showed that 7.5% of women experienced the postpartum depression. Sood[12] showed 13% of women experienced depression in postpartum period. Klainin and Arthur reviewed 64 studies from 17 Asian countries and found that Post-Partum Depression ranged from 3.5% to 63.3%.[15]

The comparison of Scores b/w caesarean section and vaginal delivery by unpaired "t" test was done and it was found that there was no significant difference between the two groups.

Sankapithilu et al[16] in their comparative study of frequency of postnatal depression among subjects with normal and caesarean deliveries found no significant difference between the two groups. Saisto et al found that mode of delivery did not predict postnatal depression at 8 to 12 weeks.[17]

A longitudinal study by Patel et al revealed that there was no reason for women at risk of postnatal depression to be managed differently with regard to mode of delivery.[18]

In our study subjects from both the groups scored low in BPRS Scales, thereby suggesting that none of them developed psychotic symptomspost-delivery. Our finding can be explained as Puerperal psychosis is a severe and relatively uncommon form of postnatal affective illness occurring following less than 1 per 1000 deliveries.[19]

Comparison of BPRS Score b/w Caesarean section and vaginal delivery by unpaired "t" test reported no significant difference between the two group. Similar results were obtained from cross-sectional clinical studies of post-partum psychosis which shows no differences between the rates of Caesarean sections in probands and matched controls.[20]

Conclusion

After collecting data appropriate statistical tools were used. In present study when BDI and BPRS scores were compared between two groups there was no significant difference between the group. The finding was in agreement with the other studies. Hence, there was no effect on Postpartum depression and psychosis due to difference in the mode of delivery.

Limitations

1. Small sample size of 100 patients.
2. Patients was only followed up twice after delivery (3 days after delivery, 1 month).

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Original Article

Gender Differences in Parenting Stress in Caregivers of Children with Intellectual Disability

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ABSTRACT

Introduction: *Researches in the recent years have consistently shown that parents of children with intellectual disability experience greater stress than parents of normally developing children. There has been enormous understanding into the various challenges that these parents face.* ***Objective****: The aim of the present research was to study and compare parenting stress and its domains in parents of children with intellectual disability (ID).* ***Methodology****: The study sample consisted of 100 parents of children with intellectual disability- 50 mothers and 50 fathers selected using purposive sampling and fulfilling inclusion and exclusion criteria. Parenting Stress Index was used to study the total stress and its domains (child domain and parent domain) in the sample. Descriptive and inferential statistics was applied using SPSS version 17.0.* ***Results*** *showed no significant differences in total stress as well as on both the domains between the two study groups. To* ***conclude****, there are no gender differences in parenting stress among parents of children with intellectual disability.*

Keywords*: Parenting stress, Gender differences, Intellectually disabled children.*

Introduction

Disability is an important public health problem. Although, disabilities are universal conditions, however, till recent times disability has received scant attention in social systems like India. It has been estimated that about 10% of children experience developmental disabilities requiring access to health care system and extensive caregiving, often throughout childhood and also into adult years.[1] Intellectual disability is one such developmental disorder that is present in the developmental period and is characterized by limitations in socio adaptive functioning along with limitations in intellectual functioning.

Majority of people with intellectual disabilities live in the community, usually supported by one main caregiver, mostly the parent on whom the greatest share of responsibility falls. Parenting a child with developmental disability adds a lot more responsibility to the parents as compared to parenting a typically developing child. Parents have important mental health needs in their own right, their wellbeing has a key impact upon the quality of life of their child as well, and they represent the cornerstone of any community care package, without which institutional care would become necessary for many more persons with intellectual disabilities. As has been reported by numerous studies, parents of children with intellectual disability experience heightened stress as compared to the parents of normally developing children.[2-3] The presence of a child with developmental disability in the family involves continuous stress that incorporates many minor and major crises which call for a lot of adjustment for the family caregivers especially parents.

It has been reported that severity of ID per se is not the major determinant of caregiver stress[4]. Rather, the stress that the parents of these children

experience and their response to the presence of a chronically ill or disabled child is partly determined by parents' own ways of thinking about the child and how they cope with this situation in their life.

Thus, parents of children with developmental disabilities experience increased levels of parental stress. However, the experience of stress if dependent on how individuals perceive their situation and what are the coping strategies that they use to manage their stress.[5]

Despite the understanding and research into the challenges that the parents of children with intellectual disability face along with the understanding that the level of stress experienced may vary with the coping strategy used, till date to the best of authors knowledge there have been no Indian studies on gender differences that have evaluated gender differences in parenting stress of parents of children with intellectual disability. Considering these lacunae in the knowledge regarding gender difference in perceived parenting stress, the present study was planned.

Material and Methods

Purpose: The purpose of the present research was to study and compare the parenting stress of mothers and fathers of children with intellectual disability.

Design: A 2 group design (i.e. mothers of children with ID, fathers of children with ID) was used in the present study.

Sample: The study population consisted of children with ID; and their parents. Children with ID were those attending OPD at various neuro-psychiatric hospitals/ clinics and special schools in Delhi. Purposive sampling was used. The total sample of 100 consisted of 50 mothers and 50 fathers of children with ID. The inclusion criteria for children were-children between ages 5 to 12 years (both genders) diagnosed as cases of Intellectual disability as per DSM -V criteria. *Children with following comorbid conditions would be excluded from the study:* Epilepsy, hearing impairment, visual impairment, motor impairment, speech impairment, any other significant medical illness. Inclusion criteria for caregivers was ages between 30 years to 45 years and minimum 12th grade education. Single parents, caregivers having any significant medical/ psychiatric illness; and those with any significant medical/ psychiatric family history that might contribute to caregiver burden were excluded from the study sample**.**

Tools: *The following tools were used in the study:*

1. ***Sociodemographic Performa***: It would consist of a structured format to record variables regarding the caregiver and the child with autism such as age and gender of child; age, gender, education, occupation, marital status of caregivers.
2. ***Seguin Form Board Test*****:** For the present study, norms given by Goel[6] were used. This test was used to get IQ of children for diagnostic confirmation.
3. ***Vineland Social Maturity Scale (VSMS):*** The Vineland Social Maturity Scale was originally developed by Doll[7] and since then this scale has proved useful instrument in measuring social maturity of children and young adults. It serves the purpose of estimating the differential capacities of an individual. The Indian adaptation of the Vineland social maturity scale given by Malin[8] comprises of 89 items and was used to assess the social adaptive functioning of children in the present study. The VSMS measures the differential social capacities of an individual. It provides an estimate of social age (SA) and Social Quotient (SQ), and shows high correlation (0.80) with IQ[7]. Considering its high correlation with IQ, SQ was considered wherever the patient was not able to perform on SFBT.
4. **Parenting Stress Index[9]** is a screening and diagnostic assessment tool designed to yield a measure of the magnitude of parent child system. It assesses stress experienced by the parent in the child domain, parent domain and the total stress. For the purpose of present research, the PSI was translated into Hindi using the back translation method. The following are the three dimensions assessed by PSI:

– Child Dimension assesses the child characteristics that may contribute to parental stress.

It includes the child's level of distractibility, adaptability, hyperactivity, child's mood and demandingness. It also assesses whether the child-parent interaction reinforces the parent.

- Parent Dimension of parenting stress assesses parent's level of isolation, depression, attachment with the child, health, role restriction (how much the parents experience their parenting role to be restricting their personal freedom), spousal support and competence.
- Total Stress is the combined score of child and parent dimension.

Procedure:

All children who were referred with a provisional diagnosis of intellectual disability were evaluated in the following way for the purpose of study:

The inclusion and exclusion criteria were applied to the children and their mothers and those who fulfilled the criteria were furnished with the necessary information about the study and a written informed consent was obtained from mothers as well as fathers. Those who gave their consent were enrolled and further evaluated for the study. Data was collected in two sessions, both the sessions were conducted in the clinical setting. In the first session, the nature of the study was explained to the caregivers and their consent taken. Further, in the first session, sociodemographic Performa was administered to elicit information about sociodemographic, clinical and caregiver details. Diagnostic confirmation of children was done by administering Seguin Form Board Test, Vineland Social maturity scale and Seguine Form Board Test. After assessments with the children, in the second session, the Parenting stress Index was administered on mothers as well as fathers.

Statistical analysis

Data obtained has been analysed using descriptive and inferential statistics. t-test has been used to study the difference in types of coping strategies. The Statistical Package for Social Sciences (SPSS, version 17.0) was used. Significance level $p < .05$ was regarded as statistically significant.

Results

Data obtained has been analysed using descriptive and inferential statistics. The Statistical Package for Social Sciences (SPSS, version 17.0) was used. Significance level $p < .05$ was regarded as statistically significant.

Out of the 67 families screened for inclusion and exclusion criteria, 7 did not meet the inclusion criteria and were therefore not included in the study. The mean age of the children was 9.5 (±2.7) years, the mean age of mothers was 40.42 (±5.25) years and the mean age of fathers was 44.01 (±5.27) years. The mean SQ of children was 47.62 (±13.48). It was hypothesised that there would be significant difference between dimensions of parenting stress of mothers and fathers of children with intellectual disability. To verify this hypothesis, the scores obtained by mothers and fathers of children with intellectual disability were compared using t-test. The results thus obtained are reported in Table 1. From the Table it is observed that there are no statistically significant difference between any of the dimensions of parenting stress between mothers and fathers of children with I.D, and therefore, hypothesis is rejected.

Table-1: Summary of t-test of dimensions of Parenting Stress (PS) of mothers and fathers having children with ID (df= 98)

Group	Mothers			Fathers				
P.S.	Mean	S.D.	S.E.M.	Mean	S.D.	S.E.M.	t-value	p
Child Dimension	87.34	13.94	1.97	84.74	15.86	1.97	0.87	0.39
Parent Dimension	88.48	9.26	1.31	85.64	17.15	2.42	1.84	0.07
Total Stress	91.16	9.15	1.29	86.42	16.16	2.29	1.80	0.07

Discussion

There are numerous effects like social and psychological impact on the lives of parents of children with disabilities. There is also evidence that high levels of stress are associated with the task of caring for a child having disability[10], including ID [11]. From the results section, it is observed that there

were no statistically significant differences on domains of parenting stress and total stress between the two study groups. Thus, although there are no statistically significant gender differences in parenting stress, there are differences in the way mothers and fathers perceive stress with regards to their own and child characteristics. This could probably be because both mothers and fathers face their own individual types of challenges and stressors when caring for their child with ID. For example, mothers may be overburdened by looking after the daily care and adaptive needs of their child while fathers may feel stressed owing to the overburden of added financial needs of the family to meet the increased expenses which are incurred towards the medical and rehabilitation expenses of the child with ID.

These findings are of concern as distress among parents has been linked to a wide range of adverse outcomes for children, including less than optimal functioning, failure to engage with services, decisions to seek out-of-home care for their disabled child, impeded child development, and higher rates of child psychopathology and antisocial behaviour[2.] The increased parenting stress is associated with lower levels of life satisfaction and marital satisfaction, poor parent-child communication and disruptive child behaviour along with poor quality of familial relationships which could have significant effects on parents' physical and psychological well-being. Considering the results of the present study, both mothers as well as fathers need equal support and guidance to be equipped with such coping so as to enhance their wellbeing and deal with the parenting stress associated with having a child with disability. To conclude, there are no significant gender differences in the parenting stress of mothers and fathers of children with intellectual disability.

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Original Article

Efficacy of Electroconvulsive Therapy in patients with Mental Illnesses: A Socio-demographic and Clinical Profile Study

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ABSTRACT

Background: *Electroconvulsive Therapy (ECT) involves the successive application of electrical current to the human brain for the purpose of alleviating symptoms of specific mental disorders. Approximately 80% of patients presenting for ECT treatment have a diagnosis of major depression.* ***Aim:*** *The aim of the study was to see the efficacy of ECT treatment and explore the sociodemographic and clinical profile of the patients with mental illnesses..* ***Materials and Methods:*** *A study was undertaken at Department of Psychiatry, tertiary care teaching hospital of North India to explore the sociodemographic and clinical profile of the patients receiving ECT in the time frame between May 1, 2018 to August 31, 2018 both in inpatient and outpatient settings.* ***Results:*** *In the considered time frame, a total number of 17 patients received ECT. Majority of the patients were females, including one pregnant female, middle aged, married and from low socioeconomic strata. Most common indication for ECTs was depression.* ***Conclusion:*** *ECT proved to be a highly effective treatment, as shown by marked reduction in scores of severity scales of each illness in comparison to baseline. Considering careful previous clinical examination, ECT is a very safe and cost-effective form of treatment of mental illness.*

Key Words: *Sociodemographic, Clinical, Mental illnesses, Electroconvulsive therapy*

Introduction

The concept of inducing seizure as a means of treating psychiatric illnesses has existed since the 16th century. Initially through chemical means, later on in 1938, Italian scientists first applied electrically induced therapeutic seizures and hence 'Electro Convulsive' Therapy (ECT) was introduced. ECT involves successive application of brief pulse electrical current to brain, through electrodes, for purpose of alleviating symptoms of specific psychiatric illness. ECT is employed in the treatment of vast majority of psychiatric illnesses today and remains the most effective treatment available for these.[1] ECT was originally applied to treat schizophrenia. The use of ECT as a mode of treatment has extended to many more debilitating illnesses like major depression[2,3] most commonly, catatonia[4] and acute mania. ECT is also considered as first line treatment, when medical and psychiatric factors require a rapid clinical response, when ECT poses less risk to patient than medication, as in pregnant[5] females and in elderly[2] and when there is history of medication resistance.[6] Pre-ECT evaluation should identify coexisting medical illnesses particularly certain cardiovascular disorders and neurological disorders such as space occupying lesions or vascular malformations and evaluate their potential interaction with ECT. Cognitive side effects remain the most problematic effect of ECT.[7] Memory disturbances observed with ECT generally falls into four basic categories i.e. stereotypical and transient postictal disorientation, short-term retrograde amnesia, anterograde amnesia and extensive retrograde

memory loss. Physical side effects reported are post-ictal headache, nausea, and muscle soreness.

The current study was planned to explore the socio-demographic and clinical profile of the patients receiving ECT and elucidate the safety and efficacy of ECT in treatment of mental illnesses.

Materials and Methods

This was a retrospective study, undertaken at the Department of Psychiatry, tertiary care teaching hospital of North India, to explore the sociodemographic and clinical profile of patients undergoing ECT, between May 1, 2018 to August 31, 2018.

Brief-pulse, bilateral, modified ECT was used in both in- and out-patients. Written informed consent was taken from patients and their nominated representative prior to initiation of the treatment. Complete pre-ECT work-up, including routine blood investigations (hemogram, serum electrolytes, renal function test, liver function test, ECG, Chest X-ray), direct ophthalmoscopic examination and pre-anaesthesia check-up, was done and only after obtaining pre-anaesthetic clearance, patients were recruited for ECT. The duration of stimulus and pulse width were individualised. Atropine and Glycopyrrolate were used as pre-anaesthetic medications. In most cases Thiopental was used as inducing agent. In an asthmatic female, propofol was used as inducing agent. In 13 ECTs Etomidate was also employed as inducing agent. All sedative/hypnotic drugs were withheld prior to ECT. The seizure activity induced by ECT is monitored by the duration of visible motor activity. Seizure is considered to be effective if the duration of motor activity is more than 25 seconds. Pre- and post-ECT Mini Mental State Examination (MMSE) is done to check recovery and side-effects, if any. Numbers of ECTs given to each patient were individualised, depending on clinical response and willingness of the patient.

Results

During these four months' time period, 17 patients were elected for ECT. Mean duration of illness was 12.4 years.

Out of these 17 patients, 52.94% were females and 47.06% males. Mean age of the patients receiving ECT was 39.2 years, eldest patient being 63 years and youngest patient being 21 years old. Most patients belonged to a low socioeconomic status and were from rural areas as shown in table no.1. Indication for ECT in 64.70% cases was poor response to oral medications, in 23.52% cases had aggressive and unmanageable behaviour that put the patients as well as those around at the risk of hurting/injuring themselves as well as others, in 5.88% cases there was history of good response to ECT in the past and 5.88% had pregnancy with mental illness as shown in figure 1.

Out of the total cases, 47.06% cases were of severe depression (in which 62.5% had unipolar depression and 37.5% had bipolar depression). Among the rest, 23.53% cases were of schizophrenia, 17.65% cases of mania and 11.76% cases were of catatonia. A pregnant female also received ECT for acute mania. A total of 131 sessions of ECT were given to 17 patients. It can be seen from the figure 2 that patients with unipolar depression received 31 ECT sessions (23.66%), those with bipolar depression received 21 ECT sessions (16.03%), those with mania received 35 ECT sessions (26.71), with schizophrenia received 33 ECT sessions (25.19%) and those with catatonia received 11 ECT sessions (8.39%). It is worthwhile to add here that at the end point of the study, i.e. at four months, a few of these patients were still being planned for further ECT sessions.

The average reduction in Hamilton Rating Scale for Depression (HAM-D)[8] was 72.85%, reduction in Brief Psychiatric Rating Scale (BPRS)[9] was 47.86% and average reduction in Young Mania Rating Scale (YMRS)[10] was 66.02%. Baseline scores of Bush-Francis Catatonia Rating Scale (BFCRS)[11] reduced to zero following ECT as shown in figure 3. Patients having co-morbid hypertension and asthma also had a desired clinical outcome with ECT.

The anaesthesia inducing agent used in 89.6% of ECTs was Thiopental, with mean duration of seizure being 32.34 seconds. In some cases, Etomidate was used as inducing agent which prolonged the motor seizure duration in all patients with mean of 60.69 seconds. Propofol was used in an asthmatic patient. Mild headache was reported by some patients after ECT, with no other significant side effect. But two of the patients who received etomidate as inducing agent had worsening of symptoms post-ECT which later improved when

Table-1: Sociodemographic and clinical profile of patients

Number of patients	Percentage	Age (years)
21-30	6	35.3%
31-40	5	29.4%
41-50	1	5.9%
51-60	3	17.6%
>60	2	11.8%
Sex		
Male	8	47.1%
Female	9	52.9%
Locality		
Urban	8	47.1%
Rural	9	52.9%
Marital status		
Married	11	64.7%
Unmarried	6	35.3%
Income		
0-3500	10	58.8%
3501-7000	2	11.8%
7001 and above	5	29.4%
Education		
Primary school	3	17.6%
Middle school	5	29.4%
Matric	1	5.9%
Inter/diploma	3	17.6%
Graduate	4	23.5%
Postgraduate	1	5.9%
Clinical diagnosis		
Unipolar depression	5	29.4%
Bipolar depression	3	17.6%
Mania	3	17.6%
Schizophrenia	4	23.5%
Catatonia	2	11.8%

were shifted to use of thiopental as inducing agent.

Discussion

This simple study, though retrospective, shows some interesting findings which further reinforce the fact that ECT is efficacious and cost-effective treatment modality in patients with mental illnesses. These findings are highlighted in the section that follows.

First of all, the study points out that ECT is still an effective treatment modality. The fact that all the patients responded or improved as measured by the reduction in scores on HAM-D, YMRS, BPRS and BFCRS is a significant finding of this study. The finding of this study is corroborated by other studies.[12,13,14] Though it is not uncommon for ECT to be less effective in some conditions,[15] but the 100% efficacy in this study is worth exploring. It could be a serendipitous finding or maybe the careful selection of the patients by the treating team after exploring the various treatment options including the past treatment response with ECT.

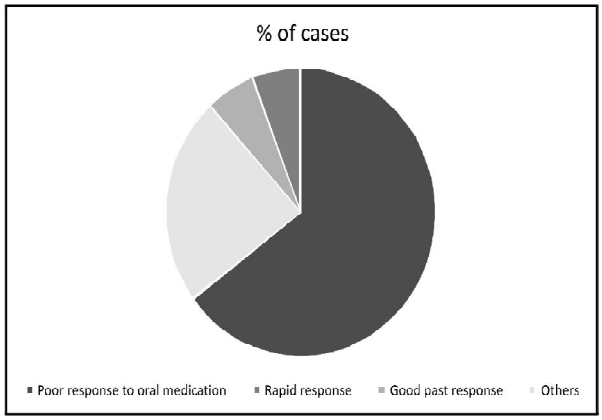

Figure-1. Indications for ECT

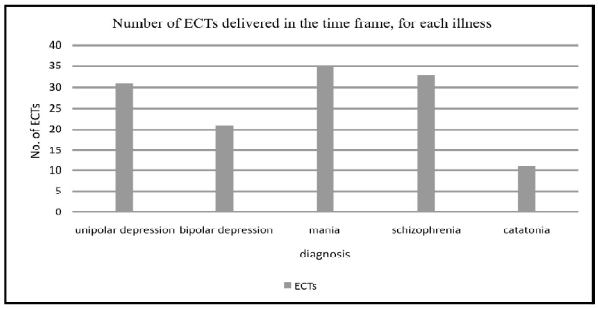

Figure-2

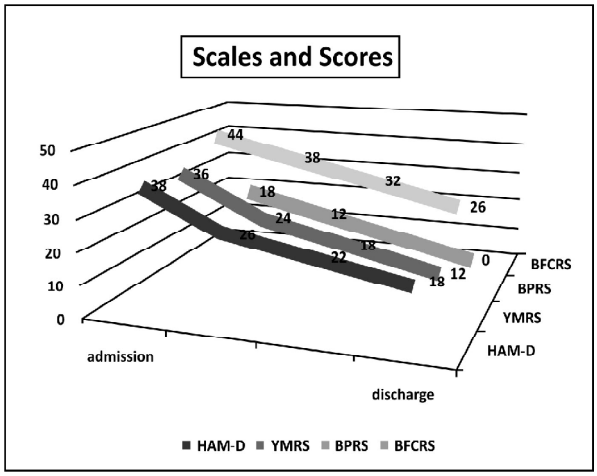

Figure-3. Reduction in scores of various standard scales

In our study, female majority was seen among those receiving ECT, which is well in harmony with western literature which shows female predominance.[16] ECT continues to be the safest form of treatment [2] for psychiatric illnesses, when considering treatment options in pregnancy. In our study as well,

only mild side-effects (that too in a few cases) were reported. None of the patients had to discontinue ECT sessions due to poor tolerability or efficacy.

In our study, major depression is the condition for which ECT was prescribed most often, which is supported well by both Indian and western literature.[2,3] ECT remains an important, yet underutilised treatment for schizophrenia. Literature shows that patients with schizophrenia, who are resistant to medication including clozapine, respond well to ECT.[17] The recommendations of the American Psychiatric Association state that "the introduction of effective antipsychotic medications markedly reduced the use of ECT in patients with schizophrenia. However, ECT still remains an important treatment option, particularly for patients with schizophrenia who do not respond to medication." In the current study, though there were a few cases of schizophrenia, but the fact that ECT sessions were effective in these cases thus reiterates what APA has highlighted.

The most recent guidelines from the National Institute for Health and Care Excellence (NICE)[18] and the World Federation of Societies for Biological Psychiatry (WFSBP)[19] Guidelines are somewhat more favourable regarding use of ECT in acute and refractory mania than in schizophrenia. However, the NICE guidelines stated that there is less robust RCT evidence to support that it is effective in the acute treatment of catatonia and mania. However, the committee considered that the data appraised taken in conjunction with the strength of clinical opinion and the experiences of users, provide sufficient basis on which to recommend the use of ECT only in restricted circumstances where the alternative treatment options have proven ineffective." The current study did demonstrate that ECT was effective in those with mania and catatonia. However, the fact that such cases were less thus goes on to show that when it comes to these conditions, especially mania, ECT may not readily be the first treatment option. In our study those cases of mania that had unmanageable and violent behaviour, thus posing a danger to themselves and others, were the only one which were selected for ECT.

Induction agents used for ECT alter the motor seizure duration. Etomidate is associated with prolonged seizure duration in comparison to Thiopental, as well documented by our observations too.[20]

Although the study has been conducted in ideal clinical setting but has few limitations in the form of retrospective analysis, small sample size and short duration of study.

Conclusion

It is thus justified to state that ECT provides promising results in patients with mental illnesses. Severe depression is the most common diagnosis for which ECT is given. Poor response to oral medications is the most common indication for ECT, as observed in the study. Most patients receiving ECT belong to low socioeconomic strata, hence not only does ECT contribute to improved clinical outcome, it is also a very cost-effective treatment option, especially in a developing country like India, with its ever-increasing burden of psychiatric illnesses.

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Original Article

A Comparative Study of Stress Level in Siblings of Children with and without Disability

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ABSTRACT

Introduction*: The sibling relationship is often the longest of any personal relationship, but with the main focus on families being toward parents (in particular, mothers) of a child with special needs, siblings are very much overlooked, not only in relation to their own mental health but also in relation to the contribution they make to the well being of a child with special needs.* ***Objectives:*** *This study was designed to examine the level of stress among siblings of children with and without disability.* ***Method****: Purposive sampling was used. Sample comprised of 30 siblings (13-17 years) of children with disability and 30 siblings (13-17 years) of children without disability from different mainstream and special schools of Delhi-NCR. Stress Scale (Hindi) was used to assess the stress in siblings of children with and without disability.* ***Results****: The purpose of present study was to study and compare the stress of siblings of children with disability. The data collected on the total sample of siblings if children with and without disability was analyzed using mean, standard deviation and t-test. The hypothesis is retained and there was no significant difference in stress of siblings of children with and without disability.* ***Conclusion****: There were no significant differences in accordance to gender. It was concluded that if siblings are supported, not only can their self esteem and sense of competence be enhanced; they can also develop a range of positive qualities such as compassion, tolerance and maturity.*

Keywords: *Intellectual disability, Children, Siblings, Stress level.*

Introduction

The birth of a child with disability brings significant changes to family life. This brings unexpected demands and challenges to parents, for which they are often not prepared. Having a child with developmental disabilities brings life changing implications and long-lasting effects in the life of the whole family.[1-2] The impact that a child with developmental disabilities has on the family is not only linear and it does not lie on only one direction. The impact is multidimensional, reciprocal, it affects the whole family system, it affects the relationships between the family members.[3-6] The birth of such a child requires greater responsibility, effort leaving less spare time for other family members, compared to a birth of a child without disability. The family of a child with disability is faced with many demands such as the special needs of the child, emotional stress, restructuring of roles, adjustment and financial difficulties in the family. Rossiter and Sharpe[7] concluded that the wellbeing of the siblings of children with developmental disabilities may be compromised due to the stress experienced in the family. The family system perspective implies the presence of a sibling with mental retardation will impact on the psychological development and functioning of their typically developing siblings. Siblings of a child with disability could many a times

feel that they are assigned more responsibility and might perceive that they receive less attention than siblings of children without disability, while trying to understand the differences of the siblings with disabilities. They share all the differences and difficulties of the disability with their parents. However, siblings of children with disabilities have received less attention from the researchers than the parents.

The sibling relationship is often the longest of any personal relationship, but with the main focus on families being toward parents (in particular, mothers) of a child with special needs, siblings are very much overlooked, not only in relation to their own mental health but also in relation to the contribution they make to the well being of a child with special needs. Most times, through siblings, children learn to openly express a range of emotions, including love, loyalty, anger and rivalry. They gain companionship and support and learn to give and take. Siblings help teach each other social skills and play a part in each other's identity development. When one sibling has special needs, some aspects of the relationship can change enormously.

Research indicates that siblings of children with special needs (disability and/or chronic illness) often grow up in a situation of considerable stress, but without the cognitive and emotional maturity to deal with their experiences. They can be confused by their reactions. On the one hand, a child may feel loving and protective toward their brother or sister. At the same time, they may feel resentment, embarrassment, guilt, sorrow and fear. If siblings are supported not only can their self esteem and sense of competence be enhanced; they can also develop a range of positive qualities, such as compassion, tolerance, and maturity. Generally, siblings across the lifespan often regard their experiences as a sibling positively. Siblings report affection and positive regard for their brothers and sisters with disabilities, attribute high levels of empathy and altruism as deriving from their relationship with sibling, and on the whole, appear to be as well adjusted and successful as individual who have typically developing brothers and sisters.

Various studies have been conducted to assess the stress level in siblings of children with disability. A descriptive study[8] reported that siblings who have brothers or sisters with mental health conditions, with autism, or with other severe behaviour problems associated with their disability are more likely to report problems in the early relationship and to exhibit symptoms of depression or less positive adjustment in later life. Rossiter and Sharpe[7] concluded that a small negative effect for having a sibling with mental retardation was discovered that could not be attributed to a publication bias or some other artefact. This negative effect was greatest for direct observation measures, measures for psychological functioning, especially depression and for children.

Some studies have reported positive effects on healthy sibling of children with disability. For example, a study on 77 parents with healthy children aged between 7 and 18 and children with Down syndrome.[9] They concluded that having a disabled child in the family had no adverse effect; in fact, they had a positive effect on their healthy siblings. Taking on important family roles increases the self-confidence of healthy children, makes them feel responsible and enables them to mature. These findings support our study.

However, there is no Indian study in Indian context regarding the differences in stress level in siblings of children with and without disability. In view of this, the present study was taken up.

Due to the inconsistencies found in the extent literature, sibling stress and adjustment is subject to wide clinical interpretation. Therefore, it is imperative for researchers to further investigate sibling stress to better guide intervention and family support practices. The primary goal is to examine the stress in siblings of children with disability in comparison to siblings of children without disability. For this purpose, it is important to first understand the major stressors that siblings of children with disability face and then to develop appropriate measures for reducing those stressors.

From the previous section, it is observed that there have been a few studies that have reported a comparative study of stress in siblings of children with disability and without disability. However, there have been no reported studies on the comparative study of stress in siblings of children with disability and without disability, especially in India. Therefore, a need for the present study was felt with the aim of assessing and comparing stress in siblings of children with and without disability.

Aim and Objectives

The aim of the present research was to study and compare the stress level in siblings of children with and without disability. It was hypothesised that there would be no significant difference in stress level of siblings of children with and without disability.

Material and Methods

The sample comprised of 60 siblings (ages 13 to 17 years, both genders, minimum education – till 5th grade) of children (6 to 10 years, both genders) with and without disabilities. The study group (Group1, n=30) comprised of siblings of children with disability (diagnosed with Moderate mental retardation) and Control group comprised of siblings of children without disability (Group 2, n=30).

Measures

1. **Sociodemographic Performa** was used to record variable regarding the children and their siblings such as age, gender, education and family type.
2. **Stress Scale[10] (Hindi)** a self report measure was used to assess the stress in siblings. This scale consists of 40 items divided into four areas- Pressure, Physical stress, Anxiety, and Frustration. It is a valid and reliable tool for assessing stress in age group 12-24 years. The scale can be administered either by self or by the investigator. It may be used in group as well as individual condition. There is no fixed limit as such. However, it generally takes about 10 to 15 minutes in its completion.

Procedure

The inclusion and exclusion criteria were applied to the siblings of children with and without disability. The nature of the study was explained to the siblings who fulfilled the inclusion and exclusion criteria. After furnishing the necessary information about the study, a written informed consent was obtained from the siblings as well as parents. After taking their consent, Stress Scale was administered. The data was analyzed using mean, standard deviation and t-test.

Results

The mean age of boy siblings of children with disability was 15.8 years and of without disability was 13.8 years. The mean age of girl siblings of children with disability was 15 years and of without disability was 13.7 years.

It was hypothesised that there would be no significant difference in stress level of siblings of children with and without disability. For this, t-test was applied on scores of stress level between siblings of children with and without disability as shown in table 1. From table 1, it is observed that the mean scores of stress level in siblings of children with disability were 17.53 (±7.36) and mean stress scores in siblings of children without disability was 17.46 (±5.74). The obtained t-value for comparison of stress score of siblings of children with and without disability was 0.97 which is not significant ($p<0.05$). Thus, the hypothesis is retained and there was no significant difference in stress level in siblings of children with and without disability.

The second hypothesis was that there would be no significant difference in stress level of siblings of boys and girls with disability. It is observed that mean scores of siblings of boys with disability were 16.4 (±7.42). The mean scores of siblings of girls with disability were 18.7 (±7.4). The obtained t-scores for scores was 0.41 ($p<0.05$) shown in table 2. Thus, it was concluded that there was no

Table-1: Comparison of Mean Stress Scores of Siblings of Children with and without Disability

	Mean	S.D.	S.E.M.	t-Value
Siblings of Children with Disability	17.53	7.36	1.34	0.97
Siblings of Children without Disability	17.46	5.74	1.5	

Table-2: Comparison of Stress Scores in Siblings of Boys and Girls with Disability

	Mean	S.D.	S.E.M.	t-Value
Siblings of Boys with Disability	16.4	7.42	1.92	0.41
Siblings of Girls with Disability	18.7	7.4	1.9	

significant difference in stress level of siblings of boys and girls with disability implying that gender of child with disability did not have any significant effect on stress level of their sibling.

Discussion

Siblings of children with intellectual and developmental disabilities are important but understudied family members. Considering this lacunae, the present research was planned with the aim to study and compare the stress in siblings of children with and without disability.

The results of the present study indicate that there was no significant statistical difference between the stress score means of siblings of children with and without disabled ($P>0.05$). Similar findings were reported by Hosseinkhanzadeh et. al.,[11] it was concluded that probably growing up with a disabled sibling couldn't explain the reason of psychiatric and behaviour problems.

Some prior researches[12-14] suggested that siblings of children with special needs may evidence a range of negative sequel, including emotional problems such as depressive symptoms or anxiety,[13-15] as well as embarrassment, fear, withdrawal, resentment, guilt, irritability, aggression, and peer conflict.[14] However there is another body of research that has concluded that siblings may also adapt successfully and evidence prosocial resources or positive changes associated with having a sibling with special needs, including greater compassion, helpfulness, understanding regarding differences, maturity, and empathy.[14-16] The findings of the present study can be explained by the latter body of research.

Furthermore, the studies that have reported higher stress and internalizing problems in siblings of children with disability are largely carried out in a time when there were limited services and facilities for the disabled. Also, it could probably be because the siblings studied were still in their parental care with no particular familial responsibilities of their own and were hence not required to balance between the responsibilities of their own family and that of their siblings. Also, it is highly likely that the adolescent issues in both the groups could have overshadowed the effects of having a sibling with disability.

Conclusion

There was no significant difference in stress level of siblings of children with and without disability. This could be partly due to the sibling's acceptance for their brothers and sisters with disability. They may understand and comprehend his or her conditions and their family's status.

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Original Article

Perceived Stress and Coping Strategies in females with Psychogenic Non-Epileptic Seizures in a Tertiary Care Hospital, New Delhi

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ABSTRACT

Background*: Psychogenic Non-Epileptic Seizure (PNES) or Pseudoseizures are paroxysmal alterations in behaviour that resemble epileptic seizures but are without any organic cause. Stress is one of the core etiological causes of dissociative disorders, thus, the perception of stress and the coping process employed by them, determine the effects that the stimuli may have on an individual.* ***Objective****: To study the level of perceived stress, choice of coping processes employed and their relationship with psychosocial correlates of females with Psychogenic Non-Epileptic Seizures.* ***Method****: One hundred twenty-one consecutive female patients with PNES were studied using the Perceived Stress Scale and Ways of Coping Questionnaire. Other sociodemographic variables that were thought to potentially influence perceived stress and coping strategies, including Age, Education level, Per capita income and Duration of illness were also recorded.* ***Results****: Over 62% had reported high perceived stress, 36.4% had moderate and 1.7% low perceived stress. Participants were found to greatly utilize Social Support Seeking as a coping strategy (mean = 15.12; SD = 4.26) closely followed by the use of Escape-Avoidant coping (mean = 14.36; SD = 3.10) whereas the least utilized coping strategy was found to be Positive reappraisal (mean = 5.50; SD = 4.86).* ***Conclusion****: Females with PNES in India are characterized by elevated levels of perceived stress and higher use of Social Support Seeking and escape-Avoidant coping strategies to reduce the impact of a stressor, which may reciprocally act to increase the patients distress, thereby maintaining their dissociative psychopathology. These findings may be utilised for psychological intervention with patients.*

Keywords*: Perceived stress, Coping strategy, Psychogenic Non-Epileptic Seizures, Pseudo-seizures, Dissociative disorder*

Introduction

Dissociation is defined as 'a disruption in the usually integrated functions of consciousness, memory, identity or perception of the environment'.[1] A Pseudoseizure or Psychogenic Non-epileptic seizure (PNES) or may be a specific form of dissociation which involves 'involuntary experiential and behavioural responses to internal or external triggers that superficially resemble epileptic seizures but which are not associated with the abnormal electrical activity associated with epileptic seizures',[2] therefore pseudoseizures are paroxysmal alterations in behaviour that resemble epileptic seizures but are without any organic cause.[3]

Historically, pseudo-seizures were known as hysterical seizures and were regarded as a manifestation of an emotional disturbance.[4] This state of altered awareness is said to act as an avoidance response that protects the individual from stressful events and from memories of those events.

Dissociation would appear to be an essential feature of pseudoseizures, which in turn might be viewed as a form of non-verbal communication of distress,[5] possibly representing a wish to escape from a difficult or unpleasant situation.[6] Pseudoseizures maybe categorized as Dissociative disorder (ICD)[7] or Conversion disorder (DSM 5).[8]

Stress is one of the core etiological causes of dissociative disorders, and the perception of stress and the kind of appraisal that is made towards a stimulus determines the effects that the stimuli may have on an individual. Perceived stress reflects the interaction between an individual and their environment which they appraise as stressful.[9] The same situation maybe appraised differently by different individuals due to their psychosocial correlates and thus have a different impact on each. In extension of the concept of stress as a cause of dissociation, the coping process that an individual employ in dealing with stressors and problems aids in the understanding of dissociative disorders. Coping is the cognitive and behavioural efforts made to master, tolerate, or reduce external and internal demands and conflicts among them.[10] Researchers have identified two broad categories of coping processes: Problem-focused and Emotion-focused. The seizure like behaviours have been conceived of as resulting from a maladaptive coping approach to stressful situations that are perceived as unbearable.[11]

Ineffective stress coping strategies may have an impact on psychopathology and vice-versa, with broader implications on prognosis and management and therefore an understanding of how females with PNES perceive stress and cope with it, will help us refine the available interventions and develop individualized treatment plans for patients, targeting adaptive coping strategies. A review of earlier studies reveals that there is scarce literature available in this area in relevance to the unique cultural context of North India. Most studies exploring stress and coping in PNES have been conducted on participants from western countries,[12,13,14] thus creating a gap in literature with reference to eastern participants.

Aim and Objectives

1. To study the level of perceived stress experienced by females with PNES.
2. To study the coping strategies employed by females with PNES.
3. To explore the sociodemographic correlates of females with PNES.

Materials and Method

Participants

Sample comprised of female patients diagnosed with Dissociative convulsions (N = 121) according to the criteria laid down by ICD-10,[7] and was collected consecutively from the psychiatry Out Patient Department (O.P.D.). Participants were referred from neurology and general medicine units to the psychiatry OPD of a tertiary care hospital. The diagnosis of PNES was established clinically by a team of psychiatrists and clinical psychologist. Patients who fulfilled inclusion and exclusion criteria were recruited for the study.

Inclusion Criteria:

1. Age: 18-45 years
2. Dissociative disorders (According to ICD-10 criteria)
3. Sex: Female
4. Literate in Hindi or English

Exclusion criteria:

1. A Concurrent clinical diagnosis of psychosis, organic brain syndrome, drug dependence or mental retardation.
2. History of major medical disorders such as, Major Cardiac problems, Chronic Renal failure, Chronic Liver Disease, Autoimmune diseases and Comorbid seizure disorder.

Procedure

A written informed consent was obtained before formal recruitment of the subjects. Detailed psychiatric history and mental status examinations were conducted on all patients. Socio-demographic data was collected by using semi-structured socio-demographic Performa. In addition to providing information regarding their age, years of education and Duration of illness, participants completed the psychological tools used in the study.

Tools

1. Semi-structured Sociodemographic Performa:

Developed for the study to record relevant Sociodemographic information of the participants.

2. Cohen's Perceived stress scale[9]:

A 10 item scale designed to measure the degree to which one perceives aspects of life as uncontrollable, unpredictable, and overloading. Participants were asked to respond to each question on a 5-point Likert scale ranging from 0 to 4, indicating how often they have felt or thought a certain way within the past month. Scores range from 0 to 40, with higher composite scores indicative of greater perceived stress.

3. Folkman and Lazarus' Ways of coping Questionnaire[10]:

A 66-item questionnaire designed to assess coping processes used in a particular stressful encounter **(**and not coping styles or traits). It measures eight ways of coping

- Confrontative Coping - Describes aggressive efforts to alter the situation and suggests some degree of risk-taking.
- Distancing - Describes cognitive efforts to detach oneself and to minimize the significance of the situation.
- Self-Controlling - Describes efforts to regulate one's feelings and actions.
- Seeking Social Support - Describes efforts to seek informational support, tangible support, and emotional support.
- Accepting Responsibility - Acknowledges one's own role in the problem with a concomitant theme of trying to put things right.
- Escape-Avoidance - Describes wishful thinking and behavioral efforts to escape or avoid the problem.
- Planful Problem solving - Describes deliberate problem-focused efforts to alter the situation, coupled with an analytic approach to solving the problem.
- Positive Reappraisal - Describes efforts to create positive meaning by focusing on personal growth. It also has a religious dimension.

Participants were asked to respond to each question on a 4-point Likert scale ranging from 0 to 3, indicating the extent to which it was used

Statistical analysis

The data was entered on MS excel and analysed by SPSS-version 23 using appropriate descriptive (Mean, SD, Range and Frequency) and interpretative statistics (Correlation). All p-values less than 0.05 was considered to be statistically significant. Results of inferential analysis indicate that the sample of the study is normally distributed.

Results

The study sample included 121 consecutive females diagnosed with PNES with age ranging from 18-45 years, with a mean age of 30.8 (Table 1). A majority (31.4%) were educated unto primary school, with the mean years of education being 7.5 with a range of 15. Related to the income, the Mean per capita monthly family income was Rupees 5824 ranging from Rs. 750-25,000, where more than 94% the patients had an income less than Rs. 10,000. With regard to the Duration of PNES, an average 25.6 months with a range of 191 months was

Table-1: Sociodemographic Profile (N=121)

	N	Percentage (%)	Mean	SD	Range
Age (years)			30.85	9.80	36
Education (years)			7.5	4.94	15
Primary	38	31.4			
Metric	33	27.3			
Senior secondary	35	28.9			
Graduation	15	12.4			
Post-graduation	0	0.00			
Per Capita Monthly Income (Rupees)			5824.3	3760.6	24,250
<5000	61	50.4			
5001-10000	53	43.8			
10001-15000	5	4.1			
15001-20000	0	0			
20001-25000	2	1.7			
Duration of Illness (Months)			25.67	34.16	191

Table-2: Frequency and Percentage of Perceived Stress on Perceived stress scale (N = 121)

Perceived stress	Frequency	Percentage (%)
Low	2	1.7
Moderate	44	36.4
High	75	62

observed.

Table 2 shows that a significant majority (62%) of the participants had High perceived stress. Analysis of coping strategies revealed that Seeking Social support was employed most (mean = 15.12), and was closely followed by Escape-avoidant coping (mean = 14.36) in females with PNES, while the least employed coping process was found to be positive reappraisal (mean = 5.50), as shown in table 3.

Table 4 shows a highly significant positive correlation between Perceived stress and Seeking Social support (r = 0.314, $p < 0.01$), a highly significant negative correlation between perceived stress and Positive reappraisal coping strategy (r=-0.446, $p < 0.01$) and a significant correlation with Escape-Avoidant coping (r = 0.216, $p < 0.05$).

Table 5 depicts a bivariate correlational analysis between Perceived stress and coping processes with Sociodemographic variables (N = 121). Results are indicative of a highly significant ($p < 0.01$) negative correlation between perceived stress and per capita income (r = -0.367) and a significant negative

Table-3: Mean and SD of Coping Strategies on Ways of coping Questionnaire (N=121)

Moderate			**44**				**1.7**	
	Coping Strategies							
	Confront-ative	**Distancing**	**Self-controlling**	**Seeking Social Support**	**Accepting Responsibility**	**Escape-Avoidance**	**Planful Problem Solving**	**Positive Reappraisal**
Mean	10.46	6.07	6.67	15.12	6.52	14.36	6.37	5.50
SD	3.10	3.71	3.78	4.26	3.89	3.10	4.25	4.86
Range	15	15	15	22	19	13	14	22

Table-4: Correlation (r) between perceived stress and coping processes (N=121)

	Coping Strategies							
Perceived Stress	**Confronta-tive**	**Distanc-ing**	**Self-controlling**	**Seeking Social Support**	**Accepting Responsi-bility**	**Escape-Avoidance**	**Planful Problem Solving**	**Positive Reappraisal**
	-0.17	0.034	0.009	0.314**	-0.25	0.216*	-0.108	-0.446**

**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

Table-5: Correlation of Perceived stress and coping processes with Sociodemographic variables (N=121)

	Coping Strategies								
Perceived Stress		**Confron-tative**	**Distanc-ing**	**Self-controlling**	**Seeking Social Support**	**Accepting Responsibi-lity**	**Escape-Avoidance**	**Planful Problem Solving**	**Positive Reapp-raisal**
Age	-0.014	0.006	-0.153	-0.059	-0.081	-0.123	-0.142	-0.11	0.094
Education	-0.049	0.077	0.002	-0.183	-0.133	-0.160	0.025	0.031	0.107
Per capita income	-0.367**	0.039	-0.084	0.147	-0.211*	0.014	-0.200*	0.098	0.068
Duration of illness	0.015	-0.093	0.053	0.057	0.83	0.047	0.039	-0.39	-0.005

**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

correlation between per capita income and Seeking Social Support as a coping process (r = -0.211, $p < 0.05$) and between per capita income and Escape Avoidant coping (r = -0.200, $p < 0.05$). Positive relations with other coping processes were not significant.

Discussion

The current study assessed the level of perceived stress, choice of coping processes employed and its relationship to psychosocial correlates of females with PNES.

Findings indicate that a large majority (62%) of our participants experienced high perceived stress, which is consistent with previous literature, that has suggested that patients with PNES subjectively experienced greater perceived stress.[12,13] The current results therefore suggest that females with PNES may have a vulnerability to unrealistically appraise situations as threatening and to underestimate their coping resources, thereby a possible function of pseudoseizures might be to reduce the emotional distress, in response to perceived stressful situations.

Our findings also indicate that females with PNES employed social support seeking as their most common coping strategy, which is a different finding from previous literature,[12-14] which had suggested the use of escape-avoidant coping to be utilized most by patients with PNES. The discrepancy in our findings can be explained by the unique cultural context of India. The Indian female is lodged into the circle of the family, with whom she shares enmeshed boundaries and close ties, as opposed to the western population who enjoy an individuated and singular sense of self, thus basing the core of Indian psyche on intimacy, family security, and stability[15]. In comparison to men, women in India lack decision making powers, access to an independent income and autonomy with a social expectation to observe restraint on other aspects of their lives and health.[16]

High expressed emotions of the family and society are often intertwined with a "restrictive" environment, leading to interpersonal maladjustment and conflicts. A study by Pandit in 2011 identified "trouble with in-laws" as the most common stressor for Indian women with PNES.[17] Here, a lack of self-expression-verbal or sexual coupled with critical comments from family members, may precipitate hysterical manifestations which act as a 'defence mechanism' to help individuals escape the painful reality of their lives (primary gain) and to obtain support from the environment (secondary gain), which would not be forthcoming if the symptom was not present. Overtime, this becomes a learnt behavior pattern, transferable to a variety of stressors outside its original context.[18]

Our findings are suggestive of a negative correlation between Social support seeking and age, education and Income. Perhaps the lack of a clear "self-other" boundary is evident in young Indian females with lower education hailing from a lower socio-economic stratum, which may compel them to seek and accept, help, sympathy and advice from others, as a means to cope with the perceived stressors of their lives. While seeking social support maybe regarded as a positive emotion-focused coping strategy in the western context, this is not the case in our study sample. When the "other" is fused with the "self" and the individual perceives oneself as inadequate in dealing with their stress independently, they tend to increase their Social support seeking in proportional to the level of perceived stress (as suggested by a positive correlation between perceived stress and Social support seeking (r = 0.314, $p < 0.01$). In addition, behaviors among families of patients with PNES yield low social support.[19] With time, an over-dependence on support obtained from outside rather than within, may further diminish the individuals sense of self and confidence, perpetuating PNES attacks and making "social support seeking" both an unfulfilled need and a maladaptive coping strategy in the Indian context.

Social support seeking was closely followed by the use of escape-avoidant coping, which is the most commonly employed coping strategy in the western context[12-14] with literature supporting the assumption that pseudoseizures are part of an avoidant behavioral repertoire[20]. While the avoidance of perceived stress may offer some benefit to the person with PNES, it acts so at a great cost as avoidance does not produce change in the triggering circumstances and leads to a failure to engage in appropriate problem focused coping, thus the person is rendered even less able to deal with possibly exacerbated difficulties[21] and is more likely to

perceive objectively harmless situations as severely stressful. Previous research has found a decrease in dissociative symptomatology and frequency of pseudoseizures with a decrease in perceived stress and changes in coping strategies employed, which further supports our findings.[22]

The current study also found a significantly low use of distancing as a coping mechanism, which is contrary to findings in earlier literature. According to a study by Frances in 1999, a person with Pseudoseizures who attempts to distance oneself isunlikely to seek appropriate therapeutic support.[13] The discrepancy in our findings may be explained by the fact that participants in our study were actively seeking treatment and were less likely to "*forget the whole thing*" or continue with life "*as if nothing had happened*" (Items assessing distancing on *Ways of Coping Questionnaire*).

The results from the present study indicate that as income increases, a reduction maybe observed in perceived stress levels, seeking social support and escape-avoidant coping. Per capita income therefore can be seen as a protective factor in PNES. Perceived stress and coping strategies were found to be unrelated to age, educational level and duration of illness and perhaps therefore our findings were consistent with previous literature from western countries.

Conclusion

Dissociative reactions can be seen as protecting the individual from unacceptable psychological experiences, and can, therefore also be regarded as a coping strategy. Different types of coping strategies may be utilized depending on an individual's perception of stress in the situation. Emotion-focused coping strategies may be more likely to be utilized if an individual perceives a stressful situation to be beyond their control. As a response to perceived stress and a means of coping, pseudoseizures might be both self-perpetuated (due to faulty stress appraisals) and maladaptive (as a faulty coping mechanism).

In our study females with PNESs have high levels of perceived stress in North India. The novelty of this research is that, for the first time, an association between Perceived stress and the use of social support seeking in patients with PNESs has been suggested. However, these findings cannot be generalized validly beyond this particular sample.

The relationship between perceived stress and coping strategies suggests that as stress increases, participants were more likely to employ maladaptive Social support seeking and escape avoidance as coping strategies. When females with pseudoseizures employ their most frequently used coping strategy, there is an associated elevation in stress perception. This finding is suggestive of a reciprocal effect of coping on perceived stress which makes people with pseudoseizures vulnerable to psychopathology.

These findings have important implications for psychological management of PNES in Indian females as it allows for identification of maladaptive coping strategies and development of individualized precise treatment plans coupled with intensive family therapy, to help develop adaptive coping and to target faulty appraisal style and secondary gains that maintain PNES. Cognitive Behavior Therapy programs that specifically address avoidance coping strategies have already been developed[23], however we now need to develop new treatment programs that target excessive social support seeking.

Limitations and Future Recommendations

A limitation of the present study was that there is a bias in that this sample includes only literate females, as our scales required the participants to be literate to select their appropriate responses. The inclusion criteria of literacy also dually ensured that participants had adequate intellectual functioning. Future studies may include illiterate participants to further generalize their findings.

Another limitation of the study was the lack of an adequate control-comparison group, which would have strengthened the validity of our findings.

Further research could confirm the role of pseudoseizures by comparing people with pseudoseizures with a group of normal subjects with high levels of perceived stress and no history of pseudoseizures. Future studies may also compare the level of stress and coping strategies used by participants in other parts of India.

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Original Article

Prevalence, Predictors and Comorbidity of Dissociative Disorder Patients at a Tertiary Care Centre in North India: A cross sectional study

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ABSTRACT

Objective: *To assess the socio-demographic profile, types of dissociation, perception about illness, elicitable stressor and comorbid depression in dissociative patients who were admitted to a tertiary care hospital in Agra, North India.* ***Method:*** *All the patients diagnosed as dissociative disorder as per ICD-10 diagnostic criteria for mental disorders admitted from April 2015 to September 2016 in Psychiatry ward, S.N. Medical College, Agra were included in the study. The demographic data was recorded on semi-structured proforma. Hamilton Depression rating scale-17 (HAMD-17)and General Health Questionnaire-12 (GHQ-12) was administered on all patients to assess comorbid depression and health quality.* ***Results:*** *Majority of patients were unmarried (60.86%), females (94.56%), hailing from a rural background (56.52%) and illiterate (44.56%). About one third (33.69%) patients were found to have dissociative trance and possession disorder. Three quarter (79.34%) patients had elicitable stressor. Low level of education was found to be predictor of dissociative disorder.* ***Conclusion:*** *Dissociative disorder is more common in lower socioeconomic background. Majority of patients did not consider their illness as a psychiatric illness rather believed it to be a serious neurological illness. A large population among them also had comorbid depression. Hence, there is a need to launch campaign at the community level to make people aware of this illness.*

Key words: Dissociation, Depression, Stressor

Introduction

Dissociation is the deterioration in the unification of experiences like perception, memory, cognition and emotions at the mental level. These experiences all together comprise of wholeness in the stream of mind.[1,2] Dissociation is perceived as a dispersion in the wholeness of a sense of self which is considered as the deterioration in the unity of biographic, chronological, and perceptive identity.[3] The clinical profiles of other mental illnesses are also affected by dissociative disorder.[4] Dissociative disorders are commonly seen in patients of borderline personality disorder[5] and obsessive-compulsive disorder.[6]

Unbidden intrusion into awareness and behaviour, with accompanying losses of continuity in subjective experience is known as positive dissociative symptoms; while the inability to access information or to control mental function that normally is readily amenable to access or control are known as negative dissociative symptoms. Positive dissociation includes depersonalization/ derealization and dissociative identity disorder while negative dissociation includes dissociative amnesia. In the development of dissociation, traumatic experiences like childhood abuse, chronic physical, sexual, emotional abuse and a noncooperative home

environment may play an important role.[7,8] Manifestations of childhood dissociation are often missed but trauma in later years may lead to the reappearance of the illness. Dissociative disorders usually develop as a way to cope with trauma.

Dissociation is an auto-hypnotic defence mechanism which provides the psychological wholeness to the individual against traumas.[9] The trauma response probably evolved to serve as "learned instinct" for adaptation to a particular ecological niche. The overall patterns are hypothesized to have been adaptive in the dangerous but stable environment of evolutionary adaptation, but progressively dysfunctional in a rapidly challenging milieu like the technological societies of today. According to the neurobiological theory, the depletion in L-tryptophan, a serotonin precursor increases the depersonalization symptoms.

The twin study demonstrated that genetic heritability of pathological dissociation was zero, suggesting that dissociation might be strongly driven by environmental traumas.[10] It appears that traumatic events play a major role in the pathogenesis of dissociative disorders, although the age, type, and severity of the traumas involved may differ. Victim of childhood abuse is characterized by the shifts in self states and the fragmentation of self and behavior.[11] Self destructive behaviour, childhood trauma and emotional dysregulation are common in borderline personality disorder and dissociative disorder.[12] Researchers have also argued that both borderline personality disorder and dissociation are types of posttraumatic syndrome involving the common mechanism.[13]

Very few studies have been conducted which evaluated comorbid depression, types of dissociation, identifiable stressor and awareness about dissociative disorders. So the present study aimed to evaluate sociodemograghic characteristics, the various types of clinical presentations and estimation of comorbid depression in patients who were admitted in the psychiatry ward of a tertiary care hospital.

Methodology

The present study was a cross-sectional study conducted at the department of Psychiatry, Sarojini Naidu Medical College, Agra, situated in northern India. All the admitted patients in the psychiatry ward from April 2015 to September 2016, diagnosed as dissociative disorder by consultant psychiatrist according to ICD-10 DCR were recruited for the study. The study was conducted over a period of 18 months after approval from the ethical committee of the college. Written informed consent was taken after enrolling all the subjects. Confidentiality and anonymity were also ensured in this regard.

Inclusion Criteria:

1. All dissociative patients (according to ICD-10 DCR) who were between the age group 18-65 years.
2. Who gave informed consent.
3. Who were not taking any drug or substance for the last 4 weeks.

Exclusion Criteria:

1. Who were substance dependent except for nicotine and caffeine.
2. Individuals with other primary psychiatric disorder.

Procedure

Ninety-two patients who fulfilled the inclusion and exclusion criteria were recruited for the study. A semi-structured proforma, 17 items HAM-D and GHQ-12 was applied on all the inducted subjects to gather information.

Results

Table-1: Sociodemographic Profile of Patients

Category	Variable	Patients(n=92)
Sex	Male	5 (5.43%)
	Female	87 (94.56%)
Age in years	18-25	49 (53.26%)
	26-35	37(40.21%)
	>36	6(6.52%)
Education	Illiterate	41 (44.56%)
	Primary	31 (33.69%)
	Middle	5 (5.43%)
	High school	9 (9.78 %)
	Intermediate	6 (6.53%)
Occupation	Unemployed	59 (64.13%)
	Unskilled worker	21 (22.82%)
	Semiskilled worker	12 (13.04%)
Marital status	Unmarried	56 (60.86%)
	Married	35 (38.04%)
	Widow	1 (1.08%)
Residence	Urban	40 (43.47%)
	Rural	52 (56.52%)
Family history	No	78 (84.78%)
	Yes	14 (15.21%)

Table-1 shows that dissociative disorder is more common in females. Mean age of the patients was found to be 26.66 ± 6.614 years. Majority of patients belonged to 18-25 years (53.26%) age group, were illiterate (44.56%), unmarried (60.86%) and hailed from rural background (56.52%) without family history (84.78%) of dissociative disorder.

Table-4. Comorbid depression

Variable	Frequency	Percentage
Mild depression	36	39.13%
Moderate depression	27	29.34%
Severe depression	3	3.26%
No depression	26	28.26%
Total	92	100%

Table-2: Types of dissociation

Types of dissociation	Residence	Frequency	Total	Significance
Dissociative stupor	Rural	5	12 (13.04%)	.620
	Urban	7		
Dissociative trance and possession disorder	Rural	18	31 (33.69%)	
	Urban	13		
Dissociative disorder of movement and sensation	Rural	5	11 (11.95%)	
	Urban	6		
Dissociative motor disorder	Rural	11	15 (16.30%)	
	Urban	4		
Dissociative anaesthesia and sensory loss	Rural	3	6 (6.52%)	
	Urban	3		
Mixed dissociative disorder	Rural	10	17 (18.47%)	
	Urban	7		
Total		**92 (100%)**		

Table-2 shows that most common type of dissociation found was dissociative trance and possession disorder and no statistically significant difference was found between rural and urban patients.

Table-3:Attitude towards illness

Prior consultation	Psychiatric	28 (30.43%)
	Non-psychiatric	64 (69.56%)
Identifiable Stressor	No	19 (20.65%)
	Yes	73 (79.34%)
View about their illness	Serious physical illness	23 (25%)
	Serious neurological illness	32 (34.78%)
	Psychiatric illness	16 (17.39%)
	Not illness but due to some evil sprit	21 (22.82%)

Table-3 shows that only 30.43% patients had prior psychiatric consultation before coming to our hospital. More than one third (34.78%) patients considered that they were suffering from serious neurological illness and three fourth (75%) had an identifiable stressor.

Majority of patients were found to be depressed, mild depression (39.13%) being the commonest comorbidity closely followed by moderate depression (29.14%). Mean GHQ score was found to be 20.18 ± 5.396.

Discussion

Majority of participants in our study were females which comprised 95% of the sample. Previous studies conducted in Indian subcontinent also point towards a higher prevalence of dissociative disorder in female gender with 92.5% preponderance rate.[14] Females are vulnerable to abuse and have poor social support in Indian scenario. Survivors of war, physical abuse and trafficking are the few commonly encountered causative factors of dissociative disorder. Various studies conducted on dissociative patients found childhood sexual and physical abuse[15] along with poor social and familial support[16] as the etiological factors responsible for the development of dissociative disorder.

More than half (53.26%) of dissociative patients in our study belonged to 18-25 years' age group with mean age being 26.66 ± 6.614 years. Only 6.52% patients were aged 36 years and above. This observation is supported by the study of Uguz et al[17] in which they found the mean age of the patients to be 25.9 years. Findings of Deka et al[18] also supported our observations in which 57.5% patients

were between 18-29 years.

Most patients in our study were either illiterate (44.56%) or received only primary education (33.69%) and only 6.53% were having inter-mediate or higher education. This finding contradicts the results of study by Datta et al,[19] in which 84.21% patients were educated. But they also found that most of the patients did not complete their matriculation. This is due to the slight difference in literacy rate of Uttar Pradesh and Assam. Since our hospital caters the under privileged sections of society by providing free of cost consultation and treatment, therefore, a possible reason for higher prevalence of dissociation in lesser educated groups in our study could be the patient sample which chiefly comprised of people with limited or no access to education.

Most cases in our study were unmarried 56 (60.86%). This finding is slightly lower than the results of Deka et al,[18] in which 72.5% patients were unmarried. A possible explanation for higher prevalence of dissociation in unmarried group could be the patient sample which largely comprised of individuals aged 18-25 years. More than half of patients belonged to rural background (56.52%) which is similar to the observation (57.1%)of previous study by Sharma et al.[20]

We observed that 78 (84.78%) patients had no family history suggestive of dissociative disorders which is similar to the findings of Waller et al.[10] They conducted dizygotic and monozygotic twins study and concluded that the variation in experiences of pathological dissociation could be attributed to both shared and non-shared environmental experiences, but heritability appeared to have no effect. There were total 65 (70.65%) patients who had awareness of similar kind of disease in their known while 27(29.34%) had no awareness of such kind of illness. This data supported the learning theory of dissociative disorder.

Dissociative trance and possession disorder was the most common (33.69%) type, followed by mixed dissociative disorder (18.47%) and dissociative motor disorder (16.30%). Our findings contradict the observation of Roelofs et al,[21] in which paralysis/ paresis was the commonest presentation. Various factors are responsible for the presentation and prevalence of dissociative disorders including cultural beliefs and type of stressor. According to Fujii et al[22] dissociative identity disorders (DID) in Japan are far less than in North America. This is due to North American participants with DID being more exposed to physical or sexual abuse in childhood. The North American participants in his study also had nearly three times higher altered personalities as compared to Japanese participants.

Only 28 (30.43%) patients had prior psychiatric consultations before coming to our institute. Rest of the patients consulted faith healers, traditional and general physicians before seeking first psychiatric consult. This finding indicates unawareness about dissociative disorders in rural India. Poor literacy rate in the patients is also responsible for poor knowledge about the nature of the illness. We were able to elicit stressor in 73 (79.34%) patients. This finding is backed by the observation of Datta et al,[19] who found 73.76% of the patients had elicitable stressor while remaining 26.31% did not have any obvious stressor (elicitable) which precipitated the illness. Previous studies have explored the connection between abuse and dissociation and this connection was found markedly significant and independent of the type of abuse.

Only 28.26% of patients were not depressed and rest were depressed on applying HAM-D. Majority of the patients were mildly depressed (39.13%) and 3.26% were severely depressed. Habeeb et al,[23] also observed that depression (25%) was the most common comorbid psychiatric illness in dissociative disorder. The highest rate of comorbid depression was reported from United States of America, where depression was associated with 51.0% of the cases with dissociative disorder.[24] According to the neurobiological model of dissociation and depression, both involve serotonin as neurochemical, and in both lower level of serotonin, were seen. This explains why in dissociative patients there is a high comorbid depression. It is also found that orbital prefrontal areas regulate affect, motivation and body state. Early traumatic stress affects the right brain which is responsible for auto biographical memory.[25] This finding suggested that mind and brain have a complex network in which the brain is linked to mind that mediates subjective mental states.[26,27]

General health questionnaire (GHQ) score in our patients was found to be 20.18 ± 5.396 which was >20. The GHQ score >20 is suggestive of

severity of problem and psychological distress in dissociative patients.[28] Researchers have found a connection between difficulties with emotional regulation and post traumatic stress disorder.[29] Briere[30] found that affect dysregulation and post traumatic stress symptoms were the only significant multivariate predictors of dissociation in a traumatized sample. He concluded that risk factors including high posttraumatic stress and poor affect regulation skills may determine whether traumatized individuals develop pathological dissociation. He also hypothesized that emotional regulation moderates the relationship between trauma and dissociation. However, a study of 290 college students found no evidence that emotional regulation moderated the relationship between peritraumatic dissociation or peritraumatic distress and later trait dissociation.[31]

Conclusion

Dissociative disorder is more common in females belonging to the lower social background with lower literacy rate. Our study also revealed that dissociative trance and possession disorder is the commonest type of dissociative disorder presenting to our hospital. Dissociative patients are at greater risk of developing comorbid depression. The percentage of comorbid depression with dissociative disorders was found to be 71.74% in our study which is very high compared to currently available literatures. So, all dissociative patients should be screened for depression because of its high comorbidity.

Limitation

Since most patients in our study had non-psychiatric consultation prior to coming to our institute which may affect actual socio-demographic and clinical profile of dissociative patients in the community. To overcome these problems there is a need to design a study at community level. We had not considered personalities of the patients, which also plays important role in coping with stress. The relationship of dissociative disorder with depression needs to be explored in studies involving larger and more representative samples. History of childhood trauma was not explored which is hypothesized as an etiological factor for the dissociative disorder.

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Original Article

Audit of Assessment of Metabolic Syndrome in Patients with Schizophrenia on Antipsychotic Medications

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ABSTRACT

Introduction*: Prevalence of metabolic syndrome is higher in people with schizophrenia compared with other psychotic disorders. Cardiovascular problems account for over 60 percent of such premature deaths. Use of antipsychotics have been implicated in the development of metabolic syndrome in patients with schizophrenia. Psychiatrists need to be aware of potential metabolic side effects of antipsychotic medication and to include them in the risk/benefit analysis.* ***Aims & Objectives****: To assess the workup for metabolic syndrome in people with schizophrenia on antipsychotic medications.* ***Method****: The audit was performed for the workup of metabolic syndrome in 100 patients with schizophrenia on antipsychotic treatment attending the outpatient clinic of a tertiary hospital. Physiological and biochemical parameters were collected from the medical records of the patients and analyzed.* ***Results****: A total of 100 patients were included. Huge variation was found in investigations ordered for in different patients. Prolactin was not measured in any of the patients.* ***Conclusions****: Although people with schizophrenia frequently have metabolic syndrome, the standardized protocol for evaluating it is not followed regularly. This study highlights the need to adhere to guidelines developed for evaluation of the metabolic syndrome in patients with schizophrenia on antipsychotic medications.*

Keywords*: Metabolic Syndrome, Antipsychotic agents, Schizophrenia.*

Introduction

Metabolic syndrome, a cluster of disorders comprising of obesity (central and abdominal), dyslipidaemias, glucose intolerance, insulin resistance (or hyper insulinemia) and hypertension, is highly predictive of type 2 diabetes mellitus and cardio-vascular disease.[1]

Metabolic syndrome, as defined by the third adult treatment panel of the National Cholesterol Education Program (NCEP), is presence of 3 or more of the following:[2]

1. Waist circumference > 102 cm in men or > 88 cm in women
2. Elevated triglycerides $\geq$ 150 mg/dl
3. Decreased HDL cholesterol < 40mg/dl in men or < 50 mg/dl in women
4. Hypertension – Blood Pressure $\geq$ 130/85 mmHg
5. Hyperglycemia – Fasting Plasma Glucose $\geq$ 100mg/dl

Prevalence of metabolic syndrome is higher in patients with schizophrenia compared with other psychotic disorders, and in India, it has been studied to be around 40%.[3] Life expectancy in people with schizophrenia is reduced by 20% compared to general population,[4] with 60% of the excess mortality

due to physical illness.[5] This partly may be explained by the poor diet, lack of exercise and high prevalence of smoking[6] in people with schizophrenia; hence the prevalence of type 2 diabetes and cardiovascular disease[7,8] are increased. Further, schizophrenia itself may be a risk factor for diabetes, and the use of antipsychotic drugs, particularly second-generation antipsychotics (SGAs), have metabolic consequences that contribute to the risk.[9–11] The highest risk is seen in patients treated with Clozapine.[10] Elevations in 6 leading modifiable risk factors for mortality have been found in patients diagnosed with schizophrenia: smoking, hypertension, raised blood levels of glucose, physical inactivity, obesity, and dyslipidemia.[12,13]

Various studies have concluded that there is a need for active, routine physical health screening of all individuals receiving treatment with antipsychotic drugs.[14–16]

Aims and Objectives

To assess if the workup for metabolic syndrome in people with schizophrenia on antipsychotic medication is being done as part of the regular assessment.

Methodology

The audit followed a retrospective observational study design wherein a chart review of a total of 100 patients, who were diagnosed with Schizophrenia (F20), according to ICD-10 diagnostic guidelines and on treatment with antipsychotic medications, was conducted over a span of 6 months in the out-patient department of a tertiary care hospital.

The clinical records were assessed for the following:

a) If the workup of metabolic syndrome[17]is being done as a part of the routine assessment in these patients
b) Assessed parameters were checked for any abnormalities

Data of the metabolic workup were collected retrospectively from the clinical records of the patients and it included assessment of the following parameters: weight, blood pressure, fasting blood glucose, cholesterol/triglycerides, prolactin, and electrocardiogram (ECG).

Results

Out of 100 patients included in the audit, weight was measured for 73 of the 100 patients. Blood pressure was examined in all the 100 patients. Cholesterol levels and fasting blood sugar levels were assessed in 14 and 21 patients respectively. None were assessed for prolactin levels. However, Prolactin level was requested for one patient who complained of amenorrhea. ECG was done in 63 patients. The results of the audit showed that there were significant variations in the investigations ordered. (Figure 1)

Number of patients whose metabolic parameters were assessed

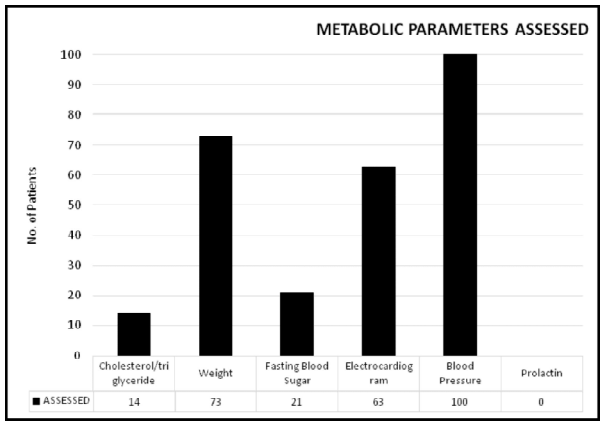

Fig-1: Graphical representation of the metabolic parameters assessed

Of the 14 patients assessed for cholesterol and triglycerides, 5 were noted to have abnormal values. Fasting blood sugars levels were seen to be abnormal in 4 of the 21 patients assessed.Thirteen of the 100 patients assessed for blood pressure were found to have abnormalities. Weight and ECG were noted to be in the normal range in all the patients assessed. (Table 1)

Table-1: Representation of the normal and abnormal values among metabolic parameters assessed

Test	Assessed	Normal	Abnormal
Weight	73	73	0
Blood Pressure	100	87	13
Fasting Blood Sugar	21	17	4
Cholesterol/ triglyceride	14	9	5
Prolactin	0	0	0
Electrocardiogram	63	63	0

Discussion and Conclusions

The audit revealed that the prescribed guidelines[17] for the metabolic workup for patients on antipsychotic medications are not followed as recommended. Blood pressure and weight were seen to be measured more commonly than the rest, probably because of ease of measurement and the cost factor. However, fasting blood sugar levels and cholesterol assessment was ordered in less than 50% of the patients. And prolactin levels were not assessed in any of the patients. The largest study done in patients with schizophrenia, the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE), has concluded that approximately one-third of patients met the NCEP criteria for metabolic syndrome at baseline.[18,19] Some antipsychotic agents were associated with more significant metabolic adverse effects.[20] Our study did not take into consideration the specific antipsychotic medications the patients were on. In the CATIE study, 13% were found to have diabetes when the fasting or random plasma glucose was measured in 689 people with schizophrenia. Three studies that have directly measured fasting or random plasma glucose in people who had schizophrenia and/or were treated with antipsychotic drugs, and who were not known to be diabetic prior to testing, found that 6% met the diagnostic criteria for diabetes.[21] In other studies for hypertension, 27-36% were found to have hypertension.[8,21]

Deficits in screening for metabolic syndrome in patients with schizophrenia on antipsychotic medication poses risks as the metabolic syndromes are not detected and treated. This study highlights the need to adhere to the guidelines developed for evaluation of the metabolic syndrome in patients with schizophrenia on antipsychotic medications. Psychiatrists need to be aware of the potential metabolic side effects of antipsychotic medication and to include them in the risk/benefit assessment when choosing a specific antipsychotic.

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Original Article

Factorial Validation of Connor Davidson Resilience scale on Indian Sample

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ABSTRACT

Introduction: *There is a consensus on the importance of resilience to overcome adversities and stressors in a day to day life. Connor Davidson Resilience Scale (CD-RISC) is one of the highly cited and used tools to assess resilience in general as well as in psychiatric outpatients. The tool has been validated in many parts of the world along with translations.* ***Aim:*** *To validate the two versions of CD-RISC (25 items and 10 items) on Indian student sample. Three different models were tested.* ***Sample:*** *1339 university students of three central universities located in Delhi NCR, India.* ***Results:*** *Confirmatory factor analysis rejected the original 5-factor model and 4-factor model that was reported earlier on Indian students. 10 items scale was found to have good factorial validity as all the model fit indices were found to in the acceptable range.* ***Conclusion:*** *10 items version of CD-RISC may be preferred over 25 item version for Indian Sample.*

Keywords*: Resilience, CD RISC, Connor Davidson Resilience Scale, Confirmatory Factor analysis, Validation, Factor Structure.*

Introduction

"Stress is a reality of our daily lives".[1] People face variety of difficulties in their day to day life. From major life-threatening event/s to loss of loved ones to everyday challenges of the living, people need to adapt to the demands of ever-changing situation/environment. While some adapt positively,[2] others, lack the ability to function normally after stressful event/s.[3] The difference between both sets of people could be easily attributed to resilience. The American Psychological Association has defined resilience as "the process ofadapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress".[4] Despite the ongoing debate on the nature of resilience (whether it is a trait or process or an outcome), researchers have always outlined its importance for a successful living.[5]

Given the importance of resilience as a construct, it must be measured in the best possible manner. In a critical review of 15 existing measures of resilience, it was concluded that all the measures have some missing information about the psychometric properties.[6] However, Connor Davidson Resilience scale,[7] Resilience scale for adults,[8] and Brief resilience scale[9] were the best scales out of the 15 scales which were evaluated. Connor Davidson Resilience (CD-RISC) is one of the most cited tools to assess resilience. Its internal consistency, convergent and divergent validity has been established on general population, and as well as, on psychiatric outpatient.[7] Till date, the scale has been cited in more than 4200 research articles as compared to the Brief Resilience Scale[9] which has around 1100 citations, and Resilience Scale for adults[8] which has about 909 citations.[10] Therefore, a critical review of CD-RISC is warranted as it is the most widely used scale to measure resilience.

In the original version, authors used exploratory factor analysis and found 5 dimensions having 25

items altogether.[7] These dimensions are (i) competence, high standards, and tenacity, (ii) trust in one's instinct, tolerance of negative affect, and strengthening effect of stress, (iii) positive acceptance of change and secure relationships, (iv) control and (v) spiritual influence. Many studies have been conducted to test/replicate the factor structure of CD-RISC in different parts of the world. However, the results were not convincing.

A three-factor solution was found in Turkish[11] and Chinese sample[12] respectively. A three-factor solution was also found in a French translation of the scale.[13] A four-factor solution was revealed in some studies.[14-16] Evidence for the two-factor structure was also reported.[17] Some researchers have found a five-factor structure for CD-RISC. However, the results were not identical or similarto the original scale.[18-21] The above review clearly shows that despite being the most widely used scale to measure resilience, there is no convincing evidence on the factor structure of CD-RISC.

Campbell-Sills and Stein critically evaluated CD-RISC after noting many methodological issues such as selection criteria for the five factors, orthogonal rotation in EFA, and selection of only 2 items in the factor 'spiritual influence'.[22] To overcome these issues, they evaluated the factor structure of CD-RISC by conducting several studies. As reported earlier, like many studies they too could not replicate the five-factor solution of CD-RISC on two similar independent samples in their research. Based on two EFAs and one CFA, they presented a shorter version of the scale having 10 items. The shorter version also yielded good model fit indices.[22] The shorter version has also been validated in many parts of the world.[23-30] In a review by Windle, Bennett and Noyes of scales on resilience,[6] even this scale was found to have good results. However, it was advocated that the cultural perspective of the participants must be taken care of and the choice of tool must be meaningful for the population in which it is used.[6] Therefore, it is imperative that both CD-RISC and CD-RISC 10 (the short version) should be examined in different cultural contexts before using the scale.

To the best of our knowledge, only two studies have tested the factor structure of original 25 items CD-RISC scale in the Indian context.[16, 31] However, both found a different four-factor solution as compared to original five-factor solution. Moreover, both the researches used only exploratory factor analysis and the emergent factor structures were never tested with confirmatory factor analysis. Without CFA, the factor solution cannot be treated as dependable.[32] As far as the shorter version is concerned, the factor structure has not been examined so far on the Indian sample, despite having better evidence of construct validity than the original 25 item scale. Thus, the present research aims to fill the gap by testing the factor structure of both the original as well as the shorter version of the scale on the Indian sample. To achieve this goal, three competing models 5-factor (original model), 4-factor model as reported on Indian sample[16] and unidimensional model of 10 items have been examined so that the best model can be identified empirically.

Methods

Sample: 1339 students of three centrally funded Indian universities located in Delhi NCR, India, participated in the study. All the students signed the consent form and were briefed about the purpose of the study. 1167 students were from different undergraduate courses, while 172 were studying for their master's degree. There was a total of 547 males, 786 females, 2 transgenders and 4 preferred not to state their sex. The mean age of the students was found to be 21.02.

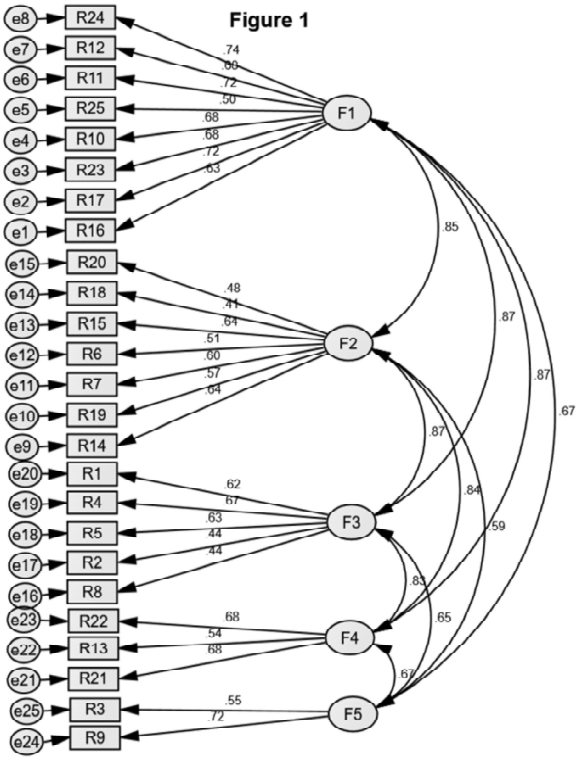
Measures

Connor Davidson Resilience Scale (CD-RISC) was used to collect the data which consisted of the original 25 items. The responses were recorded on a 0–4 rating scale, as was done in the original scale, wherein, 0 meant "not true at all" and 4 means "true nearly all the time". Cronbach's alpha was found to be .90 on the current sample.

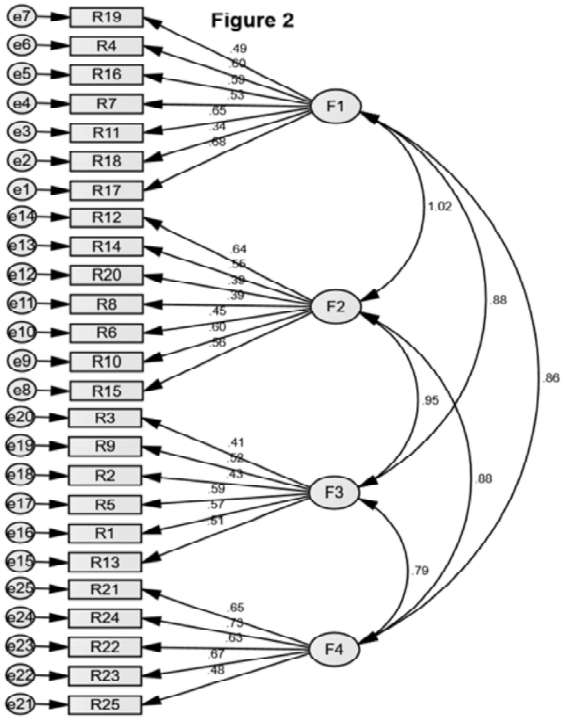
Results

Data was analysed with the help SPSS v 21 and AMOS v 21. The data was found to be normally distributed as the values of skewness and kurtosis were in the acceptable range of ± 2. The mean of resilience was found to be 68.01 with 14.57 standard deviation. To test the factorial validity of the CD RISC, confirmatory factor analysis was done on three different models. As per the theoretical

formulations of CDR scale, the original scale having 25 items covering five factors was tested first. Factor 1, consisted of 8 items, factor 2, consisted of 7 items, factor 3, had 5 items, factor 4, had 3 items and lastly factor 5, had only 2 items. The model is shown in Figure No. 1. The model was not found to be a good fit as the indices CMIN/DF = 4.72, GFI = .95, CFI = .44, RMSEA = .53 and SRMR = .60 were far below the level of acceptance. To increase the model fit indices, poor performing items were deleted one by one, but the model fit indices did not reach acceptable levels. The range of factor loading of 25 items model was found to be from .41 to .74. The average factor loading was found to be .61.



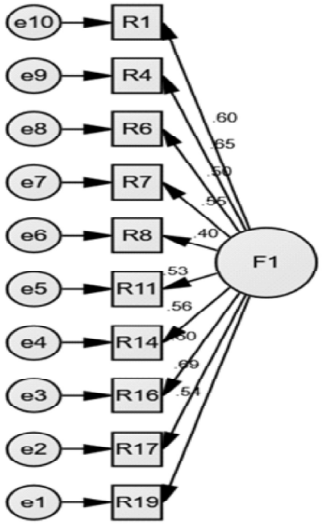
The second model comprised of 4-factor solution as reported on Indian student sample[16] was tested on the current sample. In the model, factor one and two had 7 items each, while factor three comprised of 6 items and factor four has 5 items. The model is shown in Figure No. 2. The model fit indices, CMIN/DF = 6.99, GFI = .88, CFI = .84, RMSEA = .07 and SRMR = .05, showed the model is a poor fit, as all the fit indices were outside the acceptable criteria. Trial was made to delete items with low factor loading, but model became unidentifiable, thus, indicating a problematic factor



structure.[33]

To test the 10-item scale, all the items were loaded on a single factor as shown in Figure No 3. The model fit indices such as CMIN/DF = 6.47, GFI = .97, CFI = .94, RMSEA = .06 and SRMR = .39 shows that the model is a good fit. The range of factor loading was found to be from .40 to .69. The average factor loading was found to be .56. Cronbach alpha for the short version was found to be .80.

Figure 3



Discussion

The current paper attempts to fill the literature gap by providing the empirical evidence for the factorial validation of Connor Davidson Resilience scale by testing three competing models on Indian Sample. The results indicated that the 5-factor solution,[7] and 4-factor solution[16] could not be supported in the present research. As far as the original 5-factor solution is concerned, many researchers across the world have already rejected the 5-factor solution as mentioned in the introduction, including two Indian studies conducted so far. Thus, the present research is in sync with the previous findings. The results of the present study also failed to replicate earlier findings on the Indian sample. The probable reason could be the difference between the characteristics of the two samples. The sample, in the previous research, comprised of students from IIT. However, in the present study, the sample comprised of students from different faculties except engineering. Our results concluded that out of 3 models tested in the present research, 10-items unidimensional model of resilience is much more appropriate, having good fit indices as well as reliability. The scale has shown good reliability and validity in other cultures as well.[23-30] Thus, it can be said that out of the three structures, unidimensional is far more suitable even in the Indian context. Therefore, 10-items CD-RISC can be used in place of 25-items version.

The construct of resilience is always marred with ambiguities and complexities as resilience has been defined differently by different authors[34-37] However, there are three core constructs of resilience, which have been used in the conceptualizations of resilience by various authors: adversity, bouncing back and positive adaptation. While, Masten et al focused on successful positive adaptation in hardships and disturbances,[34,36] Smith and colleagues defined resilience in terms of bouncing back from stress.[9] The shorter 10 item version has been able to tap these three constructs after removal of problematic items from CD-RISC (discussed later in the paper). Campbell-Sills & Stein write," the retained items reflect the ability to tolerate experiences such as change, personal problems, illness, pressure, failure, and painful feelings. Endorsement of these items reflects an ability to bounce back from variety of challenges that can arise in life".[22] Some of the items of this scale would make the point clear: "I am able to adapt to change, I can deal with whatever comes, I tend to bounce back after illness or hardship, I can achieve goals despite obstacles, I am not easily discouraged by failure."

CD-RISC has already been criticized on many counts. For example, Smith and colleagues opined that CD-RISC focused on protective factors of resilience rather than adaptive factors of resilience.[9] If we look at the history of the development of CD-RISC, a narrative approach for item development on the older women was used, however, construct validation was done on different groups which might have resulted in ambiguous factor structure. Windle, Bennett and Noyes and Campbell-Sills and Stein objected to the fact that there is no clarity as to how the five factors of CD-RISC developed initially.[6,22] Campbell-Sills and Stein also raised that some unrelated constructs have been presented as a factor such as "trust in one's instinct", "tolerance of negative affect", and "strengthening effect of stress positive acceptance of change and secure relationship".[22] CD-RISC also suffers from content contamination. For example: "I have close and secure relationships" in CD-RISC seem to measure attachment, instead, of resilience. "In my family we are loyal to each other" in CD-RISC seem to measure social support than resilience. ''I am friends with myself'' may be measuring anything but not resilience. CD-RISC also suffers from content redundancy.[22] For example, items "I believe I can achieve my goals, even if there are obstacles" and "I work to attain my goals, no matter what road blocks I encounter along the way" tap into the same content domain which unnecessarily add to the error components.

The above description indicates that Campbell-Sills and Stein handled many of these concerns in the shorter 10 items version of CD-RISC.,[22] as they presented resilience as a unidimensional construct, sticking to the core constructs of adversity, bouncing back and adaptation as well as managing content redundancy of items. Problematic items got removed in the new version scale at different levels of analysis;[22] thus, a concise and crisp measure of resilience was developed. The present study provided empirical support for 10 items CD-RISC in the Indian context.

Conclusion and Limitations

The study tested the factorial validity of the original and short form of CD-RISC. Three factor structures were examined, and empirical support for the single dimension short version of the scale was established, as compared to the other two. The paper also discusses, theoretically as well as methodologically, why the short version is the better version as compared to the longer version of CD-RISC.

The study has some limitations as well. 10 items unidimensional structure was supported by the results. However, further analysis including other variables is required. The sample was collected from North India. Therefore, results cannot be generalized to other parts of the country. Although the sample size includes both undergraduates as well as postgraduates, the number of undergraduates is more than postgraduates. Females out numbering males, is also one of the limitations.

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Original Article

Study of Perceived Stress in Undergraduate Medical Students in a Private Medical College in Tamil Nadu

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ABSTRACT

Background*: Stress experienced in medical school is likely to predict mental health problems that manifest later but students hesitate to seek help for their problems. Medical educators need to know the prevalence, causes, and also levels of stress among students, which has an effect on their academic achievements at different points of time during their study period and also their mental health. Stress is known to decrease attention, reduce concentration, impair decision-making skills, and reduce student's ability to establish a good relationship with patient. The lives of patients and the health of a community can be affected by this. Stress in medical students leads to medical student suicide, drug abuse and alcohol use.* ***Aims and Objectives****: The present study was conducted to assess the perception of stress among medical students and its association with demographic and other variables and to identify the probable risk factors related to higher stress.* ***Methodology****: A cross-sectional survey was carried out among 515 undergraduate medical studentsof a private medical college in Tamilnadu. Students who are willing to take part in the study by signing a proper informed consent were included in the study and were administered Socio Demographic data questionnaire and Cohens Perceived Stress Scale (PSS). Data was analysed using unpaired 't' test, logistic regression.* ***Results****: Mean PSS score in the study population was 19.89 (SD = 5.27) with a median of 21.00 (IQR 16-23). Mean PSS score for female students (n = 307) was 20.23 (SD 5.29) while the same for male students (n = 205) was 19.36 (SD 5.18). Using unpaired t-test and logistic regression, the female students, additional batch students and hostellers reported significantly higher levels of perceived stress than their male, main batch and day scholar counterparts respectively.In our study we found that the stress levels perceived by final year students, as calculated using PSS score is more than the first, second, third year students and CRRI, with p values being 0.000, 0.000, 0.009 and 0.003 in that order.* ***Conclusion****: Medical educators need to pay attention not only to the educational process, but also to the context in which it is carried out, to train good, honest and enthusiastic medical professionals, genuinely interested in their profession and especially healthy ones. Healthy medical students are likely to become healthy doctors. The ways in which medical students choose to cope with the stressors of their training will eventually act as the blueprints for how they will deal with future professional and personal stresses.*

Keywords*: Perceived stress, Medical students, Medical educators, PSS (perceived stress scale), Additional batch.*

Introduction

The body's non-specific response to demands made upon it or to disturbing events in the environment is called *stress*.[1] It is not just a stimulus or a response but rather, it is a process through which we perceive and cope with environmental threats and challenges.[2] Personal and environmental factors that result in stress are referred to as stressors.[3] In short, stress includes the changes induced by stressors and the emotional disturbances. Linn and Zeppa[4] have suggested that some stress is good for learning in medical school. Each medical student may respond to the same stressor in a different way depending on their cultural backgrounds, personal traits, experience and coping skills. According to study conducted in three British Universities, the prevalence of stress was 31.2%,[5] and it was 41.9% in a Malaysian medical school[6] and 61.4% in a Thai medical school.[7] Stress experienced in medical school is likely to predict mental health problems that manifest later but students hesitate to seek help for their problems.[8] In a Swedish study, the prevalence of depressive symptoms among medical students was 12.9%, and 2.7% of students had suicidal tendencies.[9] Medical educators need to know the prevalence, causes, and also levels of stress among students, which has an effect on their academic achievements at different points of time during their study period and also their mental health. Two recent studies from Egypt and Saudi Arabia have suggested high rates of anxiety and depression among medical students.[10,11] Studies in the United States suggest that practicing medical professionals are at risk of the mental health issues.[12] Stress is known to decrease attention, reduce concentration, impair decision-making skills, and reduce student's ability to establish a good relationship with patient.[13] Medical students have reported to have feelings of inadequacy and dissatisfaction with clinical practice in the future as a result of this. The lives of patients and the health of a community can be affected by this. Stress in medical students leads to medical student suicide,[14] drug abuse.[15,16] and alcohol use.[17] Figley spoke of the stress incurred by those professionals working with traumatized people, whom they care for and heal, and the phenomenon is either referred to as *secondary traumatic stress* or *compassion fatigue*.[18] The authors research has proved that efficient therapists are the ones who are the most vulnerable to this type of stress, as understanding suffering means to absorb suffering in itself, and to take over the victim's emotional tension and load and place oneself there.[19] Medical students have a high level of secondary traumatic stress. Thus, the better we prepare the students for a job that involves coping with enormous pressure, more powerful are the fatigue and exhaustion, especially in the lack of a risk prevention programme which the future doctors should be sensitized.[18]

Aims and Objectives

The present study was conducted to assess the prevalence of self-perceived stress among medical students and to observe any possible association between the levels of stress perception among medical students and its association with demographic and other variables and to identify the probable risk factors related to higher stress.

Methodology

Sample

A cross-sectional survey was carried out among 515 undergraduate medical students i.e. first, second, third, fourth and CRRI students of a private medical college in TN. Students who are willing to take part in the study by signing a proper informed consent were included in the study.

Tools

1. Socio Demographic data: The tool is specifically developed to meet the study needs. This is intended to collect Information on participant's age, sex, education, residence type, family, family history etc. of the participants.

2. Perceived Stress Scale (PSS)[20]

It was developed by Sheldon Cohen (1983) is one of the more popular tools for measuring psychological stress. It is a self-reported questionnaire that was designed to measure "the degree to which individuals appraise situations in their lives as stressful" The PSS items evaluate the degree to which individuals believe their life has been unpredictable, uncontrollable, and overloaded during the previous month. There are three versions of the PSS. The original instrument is a 14-item scale (PSS-14) that was developed in English with 7 positive items and 7 negative items rated on a 5-point Likert scale. Five years after the introduction of the PSS-

14, it was shortened to 10 items (PSS-10) using factor analysis based on data from 2,387 U.S. residents. A four-item PSS (PSS-4) was also introduced as a brief version for situations requiring a very short scale or telephone interviews. In general, the psychometric properties of the PSS-10 are superior to those of the PSS-14. Therefore, it is recommended that the PSS-10 be used to measure perceived stress, both in practice and research. In our study we used PSS-10. PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items.

Procedure

The initial step of the study involves participants signing the informed consent and providing the information on the Socio – demographic data sheet, followed by the 10 item Perceived Stress Scale. It is estimated that the time taken would be nearly 20 to 30 minutes to complete the questionnaires.

Statistical Analysis

As the study is mainly focusing on understanding the association of perceived stress among the MBBS students, the statistical analysis was done using unpaired 't' test and logistic regression.

Results

Demographic characteristics of the respondents

Out of 750 students, 512 completed and returned the questionnaire giving an overall response rate of 68%. The mean age was 19.2 (SD = 1.46) with a range of 17-24 years (Table 1). 205 students were male (41%) and 307 were females (59%). Regarding religion, 91.41 % students were Hindus and 28 (5.47 %) belonged to Christian and very few students 11 (2.15 %) were Muslim and of other religion 5(0.98%). Majority of students [465 (90.82 %)] belonged to main batch and 47 (9.18 %) were of additional batch. Regarding years of studying, first year and second year students were 137(26.76 %) and 121 (23.63%) respectively and pre-final year and final year and CRRI were 135 (26.37%), 78 (15.23 %) and 41 (15.23 %) respectively. 493 students were day scholars (92.38%) while 62 (7.62%) were residing in the hostels (Boarders). Concerning siblings, majority of the students had siblings 430 (83.98%). Regarding parents of the students, majority were living together 502 (98.05%) and 10 (1.95 %) parents were separated (Table 2).

Perceived stress

Mean PSS score in the study population was 19.89 (SD =5.27) with a median of 21.00 (IQR 16-23). Mean PSS score for female students (n = 307) was 20.23 (SD 5.29) while the same for male students (n = 205) was 19.36 (SD 5.18). Using unpaired t test, only gender, batch and residence was significant ($p < 0.05$) with PSS score; the female students, additional batch, hosteller reported significantly higher levels of perceived stress than their male, main batch and day scholar counterparts respectively (Table-3).

Determinants of stressed-cases by logistic regression

By logistic regression analysis stressed cases were associated with being a female [OR 3.24, 95% CI 2.15-4.87], batch [OR 6.44 (95% CI 2.43-17.05], hosteller [OR 3.33 (95% CI 1.41-7.83], previous residence [OR 1.46 (95% CI 0.97-2.20], (Table 4).

Statistically significant difference in perceived stress levelsbetween different years of study isas mentioned below:

The stress levels perceived by first year students, as calculated using PSS score is less by a difference of 2.505, 3.565 and 6.238 as compared to the second, third and final year students respectively, with p values being 0.004, 0.000, 0.000 in that order.

The stress levels perceived by second year students, as calculated using PSS score is more than that of first year students by a difference of 2.505

Table-1: Demographic variables age and PSS

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Age	512	17.00	24.00	19.72	1.46
PSS	512	4.00	36.00	19.89	5.27

Table-2: Cross tabulation of stressor and demographic variables

		Total Number of cases	%	Number of Stressed Cases	%
Gender	Male	205	40%	102	32%
	Female	307	60%	215	68%
Religion	Hindu	468	91%	284	90%
	Chirstian	28	5%	22	7%
	Muslim	11	2%	7	2%
	Others	5	1%	4	1%
Batch	Main	465	91%	275	87%
	Additional	47	9%	42	13%
Year	First Year	137	27%	79	25%
	Second Year	121	24%	72	23%
	Pre Final Year	135	26%	91	29%
	Finalyear	78	15%	48	15%
	Crri	41	8%	27	9%
Hostel	Hosteller	473	92%	286	90%
	Dayscholar	39	8%	31	10%
No Sibs	None	82	16%	57	18%
	Having Sibilings	430	84%	260	82%
Paresep	Yes	10	2%	7	2%
	No	502	98%	310	98%
School	Yes	171	33%	97	31%
	No	341	67%	220	69%

Table-3: Unpaired t test for demographic variables and PSS

	Stress	N	Mean	Std. Deviation	Std. Error Mean	t value
Gender	no	195	1.47	0.50	0.04	4.72*
	yes	317	1.68	0.47	0.03	
Religion	no	195	1.09	0.39	0.03	1.532
	yes	317	1.15	0.50	0.03	
Batch	no	195	1.03	0.16	0.01	4.125*
	yes	317	1.13	0.34	0.02	
Year	no	195	2.45	1.26	0.09	1.271
	yes	317	2.60	1.25	0.07	
Hostel	no	195	1.04	0.20	0.01	2.359*
	yes	317	1.10	0.30	0.02	
No Sibs	no	195	1.87	0.34	0.02	1.547
	yes	317	1.82	0.38	0.02	
Paresep	no	195	1.98	0.12	0.01	0.531
	yes	317	1.98	0.15	0.01	
School	no	195	1.62	0.49	0.03	1.714
	yes	317	1.69	0.46	0.03	

* significant at P <0.05

and less than that of final year students, by a difference of 3.733, with p values being 0.004, 0.000 respectively.

The stress levels perceived by third year students, as calculated using PSS score is more than that of first year students by a difference of 3.565 and less than that of final year students by a difference of 2.672, with p values being 0.000, 0.009 respectively.

The stress levels perceived by final year students, as calculated using PSS score is more by a difference of 6.238, 3.733, 2.672, 3.923 as compared to the first, second, third year students and CRRI respectively, with p values being 0.000, 0.000, 0.009 and 0.003 in that order.

The stress levels perceived by CRRI first year students, as calculated using PSS score is less by a difference of 3.923 as compared to the final year

Table-4: Determinants of stressed cases by logistic regression

	Sig.	Oddsratio	95% C.I. for Odds ratio	
			Lower	Lower
Gender	.000	3.238	2.154	4.867
Religion	.106	1.471	.921	2.351
Batch	.000	6.435	2.430	17.045
Year	.916	.992	.847	1.160
Hostel	.006	3.326	1.412	7.833
No Sibs	.343	.767	.443	1.327
Paresep	.869	.883	.202	3.865
School	.041	1.461	.972	2.195

* significant at P <0.05

Table-5: Comparison of stress among different years of study.

Multiple Comparisons

Perceived Stress Scale Bonferroni

(I) Year	(J) Year	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
First Year	Second Year	-2.50540*	.70456	.004	-4.4918	-.5190
	Pre Final Year	-3.56588*	.68489	.000	-5.4968	-1.6349
	Finalyear	-6.23882*	.80108	.000	-8.4973	-3.9803
	Crri	-2.31511	1.00536	.217	-5.1496	.5194
Second Year	First Year	2.50540*	.70456	.004	.5190	4.4918
	Pre Final Year	-1.06048	.70700	1.000	-3.0538	.9328
	Finalyear	-3.73342*	.82007	.000	-6.0455	-1.4213
	Crri	.19028	1.02055	1.000	-2.6870	3.0676
Pre Final Year	First Year	3.56588*	.68489	.000	1.6349	5.4968
	Second Year	1.06048	.70700	1.000	-.9328	3.0538
	Finalyear	-2.67293*	.80323	.009	-4.9375	-.4083
	Crri	1.25077	1.00707	1.000	-1.5885	4.0901
Final year	First Year	6.23882*	.80108	.000	3.9803	8.4973
	Second Year	3.73342*	.82007	.000	1.4213	6.0455
	Pre Final Year	2.67293*	.80323	.009	.4083	4.9375
	Crri	3.92370*	1.08942	.003	.8522	6.9952
CRRI	First Year	2.31511	1.00536	.217	-.5194	5.1496
	Second Year	-.19028	1.02055	1.000	-3.0676	2.6870
	Pre Final Year	-1.25077	1.00707	1.000	-4.0901	1.5885
	Finalyear	-3.92370*	1.08942	.003	-6.9952	-.8522

*. The mean difference is significant at the 0.05 level.

students, with p value being 0.003.

Discussion

Out of 750 students 512 completed and returned the questionnaire giving an overall response rate of 68%.

Mean PSS score in the study population was 19.89 (SD=5.27) with a median of 21.00 (IQR 16-23). The prevalence of stress is high among medical professionals and medical students.[21] There has been reported a high level of depression in medicine students, compared to the other students. Career in medical education can sometimes be stressful as it involves emotionally demanding training[22]. The continuous evaluation process, tiring work hours are not the only source of stress, academic pressure, compelling nature of medical practice which includes most of the emotional aspects of life like human suffering, death as the stems for stress.[23] Long

duration of course, educational expenses have also stood to be key stressors. One of the main reasons amongst medical students was their inability to reach out to their mentor regarding their emotions and feelings that might stigmatize them.[24] Medical students are exposed to tremendous amount of stress which relates to observed anxiety, depression and sometimes suicide too.

Mean PSS score for female students (n=307) was 20.23 (SD 5.29) while the same for male students (n=205) was 19.36. The prevalence of stress in the academics was higher among the female students compared to their male counterparts. This is similar to a study done at a medical college in Saudi Arabia[25]where the proportion of female students who had stress was higher (75.7%) than their counterpart males (57%) [$\chi^2 = 27.2$, odds ratio (OR) = 2.3, $p < 0.0001$]; at a medical college in Nagpur, Maharashtra[26] and a private medical college in Tamilnadu,[27] the mean PSS score was higher among female medical students than male students. A study from Pakistani medical school[28] also found that the female students reported significantly higher levels of perceived stress than their male companions. In a study done at G.S. Seth medical college,[29] there was no difference in the perceived stress on the basis of sex of the medical students. (M 95/128, F 80/110, critical ratio, p = NS).

One of the reasons for higher stress in female students can be that, no matter the number of stressing agents, their anxiety level – an important predictor of stress – seems to be high and the satisfaction related to leisure time seems to be smaller, since they assess the stressful situations more negatively and frequently than men and the less intense reactions of the latter to the stressing agents come from social pressure, teaching them that expressing feelings is a sign of weakness and an invalidation of their masculinity. In the South Indian setting, the average age for marriage amongst female falls in the period of undergraduate medical education and hence in being forced by the family to get married, the pressure associated with getting married, coping with a married life in addition to the taxing medical education may contribute to the higher level of perceived stress among female students.

Regarding Stay, hostellers reported significantly higher levels of perceived stress than their day scholar counter parts which is in the same lines as that of Nagpur study by Subhadha Ghade[26] where the students residing in hostel were more worried (median = 3) about the quality of food than those staying in homes (median = 2). The difference in their median ratings was statistically significant with *P*-value of 0.045 ($P < 0.05$). There was no difference in the perceived stress on the basis of place of stay (Hostel or Non-Hostel) in the study conducted by Seth Medical College, Mumbai.[29] (Hostel 61/91, Non -hostel 114/147, critical ratio, p = NS) and Anuradha et al at Tamilnadu.[27] showing that being a hosteller ($P = 0.508$), had no significant influence on stress.

The hostellers are more stressed due to the living conditions. The students have to leave their families and live by themselves with a new found freedom, in a setting with comparatively lesser moral support and the inherent problems of adolescence. This is found to be predominant in the students who were previously day scholars during school days.

In our study we found that the stress levels perceived by final year students, as calculated using PSS score is more than the first, second, third year students and CRRI, with p values being 0.000, 0.000, 0.009 and 0.003 in that order. This was similar to the findings by Anuradha et al.[27] The first year students perceive the least stress. Second year and pre-final year students were more stressed than first year students. The stress levels perceived by CRRIs are less compared to the final year students, with p value being 0.003. According to another Malaysian study,[30] prevalence of stress for the first, second, third, fourth and fifth year students was 26.3%, 36.5 %, 31.4%, 35.3% and 21.9%, respectively. Year of study was the only significant factor affecting stress among medical students (*P*-value < 0.05).

One possible reason for the low stress prevalence in prefinal year students compared to final year students could be that they developed skills to manage their studies and therefore are better able to cope with stress, in comparison to students in other years of study. Moreover, the first year students had just entered the course 2 months prior and may have still been experiencing the stages of novelty and euphoria. In addition, during this time period, they had yet to face difficult subjects because most of the subjects studied during the first 3 months are subjects which require different learning approaches. A possible reason for the high stress

prevalence could be the impact of the transitional and adaptation periods during this new phases of study. That is, the students in their second and fourth year may experience more stress compared to other years of study because they are struggling to adjust their learning approaches according to the new phase requirements. In the clinical phase of the course, there is the stress attributed to relationship with consultants and also the stress related to dealing with patients, disease, death and suffering.

People in the additional batch that is, people who fail in one subject in first year are made a separate batch and continue the same way till they complete their MBBS course. Unpaired t test showed that students in additional batch reported significantly higher levels of perceived stress than their main batch counterparts respectively (significant ($p < 0.05$). By logistic regression analysis, stress was more in odd batch students [OR 6.44 (95% CI 2.43-17.05], these students were forced to take a break of six months, before re-taking their exams. Worst-affected are students of private medical colleges as they have to pay additional fees or at least half of the annual fees for the break period. Students feel no importance is given to their batch and also that the faculties discriminate against them. We think that the increased levels of perceived stress may be attributed to the inability to accept failure after years of consistently excellent scholastic performance. Stigma and the shame associated with the failure as it may also be translated to a perceived lack of academic capacity to become a doctor, which goes on to become a blow to the self-esteem of the students, in the picture of constant pressure of performance and thereby a fear of becoming a disappointment to parents and mentors develops.

Limitations

Some of the students were absent and some were reluctant to participate in the study and hence data was obtained from only 90% of the medical students. As this is a cross-sectional study that provides only a snapshot of the stress prevalence, causality could not be definitively confirmed. It is recommended that a longitudinal study be performed to investigate the real pattern and trend of stress amongst medical students.

Future suggestions

One potential intervention programme that could be implemented to reduce stress levels of the students is a structured orientation programme that addresses issues such as expectations for each phase, how the students are going to be evaluated, how to cope with each phase smoothly. Educational institutions need to take little more efforts to ensure that the additional batch students are mainstreamed. One suggestion is teaching in small groups as a solution aiding to the students to have their progress acknowledged and to be visibly supported in their progress.[5]

Conclusion

Stress in medical students may lead to behavioural changes such as drug addiction, alcoholism and substance abuse which in turn may result inadverse behaviour amongst students including suicidal tendencies. This becomes an important public health issue as the suicidal rates among medical students and young doctors have increased progressively over the recent years. Firth says that, although the stressors can be regarded as an inevitable part of the life of a medicine student, they contribute to the creation of a feeling of helplessness which is closely associated with depression.[5] Medical educators need to pay attention not only to the educational process, but also to the context in which it is carried out, to train good, honest and enthusiastic medical professionals, genuinely interested in their profession and especially healthy ones. Healthy medical students are likely to become healthy doctors. The ways in which medical students choose to cope with the stressors of their training will eventually act as the blueprints for how they will deal with future professional and personal stresses.

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Original Article

Depression and Anxiety in patients of chronic obstructive pulmonary disease at tertiary care hospital

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ABSTRACT

Background: *Depression and Anxiety is one of the commonest co-morbidity that occurs in patient with chronic obstructive pulmonary disease (COPD) and is associated with poor compliance.* ***Methods:*** *This was a prospective study done in department of Respiratory medicine at tertiary care centre from January 2015 to June 2016. A total of 100 patients were included anddiagnosis of COPD was made on the basis of the clinical history, examination, X-ray chest, spirometry and GOLD's Criteria 2014. Depression and Anxiety was evaluated with the validated Hindi version of nine items PHQ-9 (a subset of patient health questionnaire) and Hospital Anxiety and Depression Scale respectively.* ***Results:*** *The data of all 100 COPD patients were analysed and prevalence of depression and anxiety in COPD was 53% and 19% respectively.* ***Conclusions:*** *Symptoms of depression and anxiety are common co-morbidity in patients of COPD and it has significant impact on the compliance of such patients and associated with higher mortality rate.*

Keywords: *COPD, Co-Morbidity, Depression, Anxiety*

Introduction

COPD is currently the fourth leading cause of death in the world.[1]It is expected to become the 3rd leading cause of death and the 5th leading cause of loss of 'Disability Adjusted Life Years' (DALYs) as per projection of Global Burden of Disease Study (GBDS).[2-4] In India COPD was recognized in 4.1% of population with male to female ratio of 1.56:1.[3]

COPD co-exists with co-morbidities like cardio-vascular diseases, osteoporosis, depression, anxiety, metabolic syndrome and lung cancer which increases morbidity and mortality with significant impact on prognosis.[1]

Most common psychiatric comorbidities associated with COPD patients are Depression and Anxiety.[5] The Pathophysiology of anxiety and depression in COPD patient is poorly understood. They have considerable impact on patients with COPD, in terms of associations with mortality, exacerbations and quality of life. They could place patients at risk due to non-adherence with treatment,[6,7] and suboptimal success with smoking cessation.[8,9]

Less Attention has been given on comorbid psychiatric disorders in patients with respiratory disease like COPD. Emerging evidence suggests that anxiety and depression have impact on patients with COPD therebyaffecting physical functioning, quality of life, and healthcare utilization of patients. Hence the present study was conducted to assess the depression and Anxiety in the patients of COPD.

Material and Methods

The present study was conducted in the out-patient Department of Respiratory Medicine at Mahatma Gandhi Medical College and Hospital, Jaipur over a year. Approval from Ethical Committee

and Informed consent from patient was obtained. The subjects consisted of 100 cases of COPD diagnosed according to revised GOLD Criteria 2014.[1]

Classification of severity of airflow limitation in COPD
(based on post-bronchodilator $FEV_1/FVC < 0.7$)

Gold 1: Mild	$FEV_1 \geq 80\%$ predicted
Gold 2: Moderate	$50\% \leq FEV_1 < 80\%$ predicted
Gold 3: Severe	$30\% \leq FEV_1 < 50\%$ predicted
Gold 4: Very Severe	$FEV_1 < 30\%$ predicted

Exclusion Criteria

- Patient having any past history of any Psychiatric Illness, Neurological History and any Medical History like Diabetes Mellitus, Hypertension, thyroid Disorders, Myocardial Infarction, Ischemic Heart Disease etc.
- Patients who refused to give consent
- Presence of other respiratory diseases.
- Patients who are moribund, uncooperative, unable or unfit to perform spirometry.
- Substance abuse other than Smoking

The socio demographic and clinical Profile were recorded in a special designed proforma prepared for this clinical study. Detailed Clinical history and Examination were done.Depression and Anxiety were rated by using Hindi translation of Patient health questionnaire (PHQ-9) and Hospital Anxiety and Depression Scale (HADS) respectively.

Hindi translation of PHQ-9 was self administered. Each of the nine items of PHQ-9 was scored from 0 (not at all) to 3 (nearly every day).[10] Total score can range from 0 to 27. Depending upon total score, the severity of depression was classified as

Minimal depression	(0-4)
mild	(5-9)
moderate	(10-14)
moderately severe	(15-19)
severe	(20-27)

HADS is validated in COPD patients[11] and was devised 30 years ago by Zigmond and Snaith as a screening tool for Anxiety or depression. It comprises seven question for Anxiety and seven question for depression and are scored separately.

For both Scales, scores of less than 7 indicate Non Cases

8-10	Mild
11-14	Moderate
15-21	Severe

Results

Of 100 patients of COPD 64% were males and 36% were females. Mean age of studied patients was 59.69 ± 8.36. Mean age of males and females was 60.08 ± 8.56 and 58 ± 7.6 respectively. Maximum patients (57%) belong to rural residence, (74%) lower socio-economic status. Most of the patients according to GOLD criteria belong to stage 2 (36%).

When PHQ-9 was administered it was observed that 53 out of 100 patients scored above the cut-off and were found to be suffering from depression.

In HAD-A scale 19 patients scored above the cut off and were suffering from Anxiety

Demographic Features

Table-1: Gender Profile of COPD Cases

Gender	No.	%
Male	64	64
Female	36	36
Total	100	100

Table-2: Age Profile of COPD Cases

Age Group	Female(n=36)		Male(n=64)	
	No	%	No	%
<40	3	8.3	3	4.6
41-50	5	13.88	4	6.25
51 - 60	19	52.77	28	43.75
61 - 70	7	19.44	19	29.68
>70	2	5.55	10	15.62
Total	36	100.00	64	100.00

Table-3: Residence Wise Distribution of COPD Cases

Residence	No.	%
Rural	57	57
Urban	43	43
Total	100	100.00

Table-4: Socioeconomic Profile of COPD Cases (Kuppu Swamy Scale)

Socio-Economic Status		No.	%
Lower	Lower	74	74%
	Upper Lower	8	8%
Middle	Lower Middle	14	14%
	Upper Middle	4	4%
Upper	Upper	0	0

Table-5: Staging of COPD as per Spirometry

Stage	No.	%
1	8	8
2	36	36
3	30	30
4	26	26
Total	100	100

Table-6: Depression in COPD Patients according to PHQ- 9 Scale

Severity of depression	n	%
Minimal	8	15.09
Mild	15	28.30
Moderate	21	39.62
Severe	9	16.18
Total	53	

Table-7: Co-relation of Depression with severity of COPD

Gold Stage	Number	%
1	1	12.5
2	17	47.2
3	16	53.33
4	19	73.

Discussion

COPD is a global health problem having multiple co-morbidities . Our study was done to evaluate psychiatric co morbidity namely depression and anxiety present with COPD.

In Our study mean age of patients was 59.69 ± 8.36.Dhadke et al[12] also reported similar results. As per spirometry assessment 1/3rd patients were in each stage 2 and 3, followed by stage 4 (26%) and minimum in stage 1 (8%). Results were variable in other studies while maximum cases were reported in moderate to severe COPD.[13,14]

There are many screening tests which are available to diagnose depression in primary care settings. The PHQ-9 diagnostic validity and symptom severity with clinician-detected severity have a good correlation (0.84).[15,16]

Majority of patients in the present study were from low socio-economic status. Studies have shown that due to poverty, poor education and there is high prevalence of common mentaldisorders in general Indian population.[16]

Inpresent study depression was found in 53% cases of COPD. Solano et al[17] had observed the prevalence ranging from 37% to 71%. Negi Het al[18] also reported 49.2% prevalence of depression.

A study concluded that as spirometry severity of COPD increases, score on PHQ 9 (that evaluate severity of depressive symptoms) also increases.[19] This was consistent with the findings from our study.

In our study 19% of patients were found to be suffering from anxiety disorder. Studies in the past examined the prevalence of clinical anxiety in COPD which varies from 0–40%.[20-23]

Limitation

This study has limitation in form of small sample size and being a hospital based study, the prevalence reported may be high as compared to a community based sample.

Conclusion

There are few studies from developing countries that have been focusing on the prevalence of depression and anxiety with COPD. Our study has tried to evaluate the association of the Depression and anxiety disorderswith COPD.Presence of these co- morbidities may have significant impact on the quality of life of such patients and may be associated with a higher mortality rate, It may also negatively affect compliance and smoking cessation. Hence, clinicians should consider screening of COPD patients for depression and anxiety.

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Original Article

Group Therapy Minimize Craving in Individuals with Alcohol Dependence

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ABSTRACT

Background: *Alcohol is a complex problem of society, and most often, it has been seen that craving leads the individuals to repeated relapses and consequently, it becomes difficult for the individual to control his alcohol taking behavior, however, it canbe cured by psychotherapeutic techniques.* ***Material and Methods****: The present study was aimed to minimize craving in individuals with alcohol dependence syndrome using group therapy. Twenty-two individuals diagnosed with alcohol dependence syndrome according to ICD-10 DCR were chosen from the inpatient departments of RINPAS using the random sampling technique. After taking informed consent from the individuals, Socio-demographic and Clinical Data Sheet, Severity of Alcohol Dependence Questionnaire, and Alcohol Craving Questionnaire were administered to establish the baseline. Thenthey were randomly assigned to the TAU + GT (experimental) group and TAU (control) group. Group therapy was given in the form of total ten to twelve sessions of 45 to 60 minutes with a frequency of twice a week to the TAU + GT group. After completion of the therapy sessions, post assessment was done and the follow up assessment was done after three months of post assessment. Data was analyzed with the help of Mann-Whitney U test, Wilcoxon Sign Rank test and Chi-square test.* ***Results:*** *Significant reduction was found in the level of craving of the individuals with alcohol dependence syndrome in the post intervention phase which was maintained at follow up stage.* ***Conclusion:*** *Further research is required on larger sample size and applicability to different population or other category of substance use disorders is also needed.*

Keywords: *Group therapy, Alcohol, Craving*

Introduction

Alcoholism is a burning problem in our society. Nowadays most of the individuals taking alcohol are found to beinvolved in criminal activities.[1] So, many governmental and non-governmentalorganizations came into existence in our society to relieve them from their woes and sufferings day by day. These GO'S and NGO's utilize different treatment techniques to alleviate their problems. Group therapy is one of them.

Group therapy is a common psychotherapy form for alcohol dependent individuals which is widely used in chemical dependency centers. In group therapy, the therapist may use behavior, cognitive, or interpersonal therapy in the group format. If the patients seem to show maladaptive ways of coping, behavior therapy may be used. If the patients seem to show dysfunctional thoughts about addiction, cognitive therapy may be used. If problems arise due to family and friends relatedissues than interpersonal therapy may be applied.[2] The group setting provides people with the ability to learn about their own problems from others, and it also provides social support, feedback, and hope for change.[3]

Group therapy for addiction is under the category of structured groups that focus on a theme of recovery from addiction. Group leaders set goals for the group. Subsequently, they seek ways to achieve these goals with the group. Usually group leaders do not have a chance to make a pre-group interview, hence the leader of the group (the therapist) makes a small contact with the individuals just at the beginning of a session either by shaking hands and introducing the new person to the group which builds trust and gives comfort to the new member.

Another important point in group therapy is building the norms of the group because the frequency of minimum attendance, out-of-group relations of group members (esp. sexual relations), and confidentiality issues are sensitive issues for the group dynamics.[4] There are various types of groups in group therapy for addictions.[2]

The "honesty group" helps the patients to realize how they lie to themselves. Another group is the "euphoric recall group" in which the patients talk about their experiences under the effect of alcohol, and how it affected their real life. The "reading group" is another type which starts with reading a chapter, a paragraph or a sentence from the Big Book of Alcoholics Anonymous. The "relapse prevention group" is a very important one in group therapies; it should be made once a week. It is used to find the triggers and high-risk situations before the relapse occurs. So, this group uses ring warning bell to raise the alarm before the accident occurs acting as a security system. Additionally, it is used to discuss the experiences to learn more effective coping skills.

The "spirituality group" is another type that should be run once a week. In the "childhood group", the patients realize their beliefs about people's reasons for loving them. In addition, there are "men's and women's groups" for discussing gender specific problems. The "community group" is formed for discussing actual problems inside the treatment facility with the staff or with friends, and the "inventory group" for discussing every night what they achieved or failed that day as a part of the treatment.[2]

Craving and Substance Abuse

Craving describes an irresistible need for alcohol intake that is considered to play a major role in the development and maintenance of dependent behavior.[5] It has been related to multiple dimensions including biological, psychological, neuro-adaptive and environmental domains.

In recent years, group therapy has been the primary form of treatment in structured in-patient and out-patient's addiction programs. Group provides opportunities to the individuals with alcohol dependence for mutually identification and reduced feelings of isolation and shame; peer acceptance, support and role modeling for positive changes; acquisition of new coping skills; exchange of factual information; and instillation of optimism and hope. The gathering together of people who share a common problem often creates a common bond between them, stemming from a sense of belonging and an expectation of being intuitively understood. Thus the present study was structured in an attempt to assess both curative and preventive aspect of group therapy for alcohol dependence syndrome.

Methods

Sample:

In this study, initially 22 individuals with alcohol dependence syndrome meeting various inclusion and exclusion criterions were selected from the inpatient departments of RINPAS, Kanke, Ranchi, Jharkhand through random sampling technique. In due course of time, as two patients were pre maturely discharged from the hospital on caregiver's request hence final analysis was done with only 20 individuals. Both groups were comparable/matched in the socio-demographic characteristics and clinical variables. Hence, possible effects of these variables were controlled prior to the intervention. Patients were in the age range of 25 to 35 years. To control the confounding variable, individuals with psychoses and neurological disorders, major physical problems, mental Retardation and individuals taking other substances or multiple substances other than tobacco and nicotine at the time of selection were excluded.

Research Design

A pretest and post test with control group design was used in this study. Equal number of patients were randomly assigned to "Treatment as usual plus Group therapy group" (TAU + GT) and Treatment as usual group (TAU).

Measures

***Socio-Demographic and Clinical Data Sheet*:** It is semi-structured, self-prepared performa especially drafted for this study. It contains information about socio-demographic variables like age, sex, religion, education, marital status, domicile and occupation and clinical details like diagnosis, age of onset, total duration of illness, history of alcohol or substance abuse, family history of mental illness, any history of significant head injury, seizures, mental retardation and any other significant physical, organic or psychiatric illness.

***Severity of Alcohol Dependence Questionnaire (SAD-Q)*[6]:** It is a short, self-administered 20 item questionnaire designed to measure severity 0 dependence on alcohol formulated by Edward and Gross (1976). It has 5 sub scales with 4 items in each domain. Each item is rated on a four-point scale ranging from 'almost never' to 'nearly always' resulting in a corresponding score of 0-3. Thus the total maximum score possible is 60 and minimum is 0. Its test retest reliability is 0.85.

***Alcohol Craving Questionnaire (ACQ)*[7]:** The Alcohol Craving Questionnaire contains 47-items developed to assess the multidimensional aspects of craving for alcohol among current users. Each item is related to one of five domains that are considered relevant to alcohol craving: (1) urges and desires to drink alcohol, (2) intent to use alcohol, (3) anticipation of positive outcome, (4) anticipation of relief from withdrawal and negative outcome, and (5) lack of control over use. To validate the factor models, confirmatory factor analyses (CFA) were carried out. Examination of the psychometric properties of the ACQ included the analysis of the item characteristics to exclude non-sensitive items, an exploratory factor analysis of the remaining items and calculation with high internal consistency, test-retest reliability and convergent validity. The alpha score of all domain ranges from 0.77 to 0.86.

Procedure

In this study, participants diagnosed with alcohol dependence syndrome as per ICD-10 (DCR) and meeting the inclusion criterions were selected from different units of Ranchi Institute of Neuro-Psychiatry and Allied Sciences, Kanke, Ranchi. Potential and interested candidates were approached. Once patients agreed to participate, informed consent was taken and demographic and clinical information was collected by using Socio-Demographic and Clinical Data Sheet. Immediately after obtaining consent and collecting socio demographic and clinical data, SADQ and Alcohol craving Questionnaire was administered to collect the baseline data. After this, they were randomly assigned to TAU+GT and TAUgroup. Patients in the TAU condition received standard treatment in their respective wards, which included pharmacotherapy. Patients in the TAU+GT condition received approximately 10-12 one hour long sessions of individuals GT twice in aweek during their stay in the hospital. The GT protocol was based on the practical aspects. so that the participants could participate in the treatment as their stay will dictate. Specifically, each 1 hour session contained a core set of components that allowed participants to participate in the number of group therapy sessions in accordance to their length of stay. Each session was started with the revision of the previous session. Next, goals and valued behaviors were elicited and the role of disturbing and problematic behaviors as barrier to goal was discussed. After this, group therapy was given for providing a rationale for treatment. Each session was terminated with a review and suggestions for practice of exercises to be attempted between sessions. Prior to discharge, participants were evaluated again on the same measures as on base line. At a 3 months' follow-up, participants were again evaluated on the same measures.

Statistical analysis: As sample size in this study was small, hence obtained data was analyzed by using non–parametric statistics, namely, Chi-square test, Mann Whitney U test (for between group comparison) and Wilcoxon Sign Rank Test(for within group comparison).

Results

Table 1 shows the comparison of two groups, i.e. Treatment as Usual plus Group therapy (TAU + GT) and Treatment as Usual (TAU) Group in relation to socio-demographic parameters. These two groups had no significant difference on any socio-demographic parameters, i.e. domicile, marital status, education, occupation, religion and family income. This suggests that both groups were similar in various domains of socio demographic variable.

Table-1: Comparison between Group Therapy + Treatment as Usual (GT+TAU) and Treatment as Usual (TAU) on Socio-Demographic Details (Category Variables)

Variable		Group N = 20			
		TAU +GT	TAU		
		(N=10) (%)	(N=10) (%)	*df*	χ^2
Domicile	Rural	(8) 80%	(3) 30%	2	5.273 (NS)
	Urban	(2) 20%	(6) 40%		
	Semi Urban	(0) 0%	(1) 10%		
Marital status	Married	(9) 90%	(8) 80%	1	0.392(NS)
	Unmarried	(1) 10%	(2) 20%		
Education	Below matric	(5) 50%	(2) 20%	2	3.086(NS)
	Matric	(1) 10%	(4) 40%		
	Above	(4) 40%	(4) 40%		
Occupation	farming	(2) 20%	(0) 0%	3	3.010(NS)
	Business	(2) 20%	(3) 30%		
	Labour	(2) 20%	(4) 40%		
	Private job	(4) 40%	(3) 30%		
Religion	Hindu	(8) 80%	(10) 100%	2	2.222(NS)
	Islam	(1) 10%	(0) 0%		
	Christian	(1) 10%	(0) 0%		
Family income	Below 5000	(7) 70%	(1) 10%	3	7.967(NS)
	5000-10000	(2) 20%	(4) 40%		
	10000-20000	(1) 10%	(4) 40%		
	Above 20000	(0) 0%	(1) 10%		

NS= Not Significant

Table 2 shows the comparison of two groups, i.e. Treatment as Usual plus Group therapy (TAU+ GT) and Treatment as Usual (TAU) Group in relation to ACQon baseline assessment and there was no significant difference found between both the groups in the domain of ACQ. This suggests

Table-2: Comparison between Group Therapy + TreatmentAs Usual (GT + TAU) and Treatment As Usual (TAU) on baseline assessment, post assessment and follow up assessment.

Variable	Group (Mean ± SD)		Mean Rank		U	Z
	TAU ± GT	TAU	TAU ± GT	TAU		
			Baseline Assessment			
UDUA	20.60 ± 2.67	20.50 ± 3.95	10.45	10.55	49.50	-0.03(NS)
IUA	19.30 ± 1.49	20.60 ± 2.41	9.00	12.00	35.00	-1.16(NS)
APO	26.30 ± 4.16	27.40 ± 2.17	9.35	11.65	38.50	-0.88(NS)
ARWNO	28.60 ± 2.22	28.00 ± 1.94	11.30	09.70	42.00	-0.61(NS)
LCOU	29.50 ± 1.90	28.40 ± 1.42	12.10	08.90	34.00	-1.24(NS)
			Post Assessment			
UDUA	11.20 ± 1.98	13.90 ± 1.79	7.15	13.85	16.50	-2.56**
IUA	13.60 ± 1.83	16.70 ± 1.33	6.15	14.85	06.50	-3.33***
APO	22.30 ± 1.82	25.90 ± 2.18	6.65	14.35	11.50	-2.94**
ARWNO	13.70 ± 3.46	18.60 ± 2.22	6.60	14.40	11.00	-2.98**
LCOU	13.40 ± 2.31	17.20 ± 2.04	6.60	14.40	11.00	-2.99**
			Follow up Assessment			
UDUA	11.40 ± 2.01	14.60 ± 1.83	6.80	14.20	13.00	-2.82**
IUA	13.20 ± 2.09	16.40 ± 2.11	6.65	14.35	11.50	-2.93**
APO	21.80 ± 1.68	25.40 ± 1.89	6.40	14.60	9.00	-3.15**
ARWNO	13.70 ± 3.19	17.80 ± 1.39	6.45	14.55	9.50	-3.08**
LCOU	13.80 ± 1.68	16.80 ± 1.81	6.65	14.35	11.50	-2.93**

NS = Not Significant

*p<0.05, **p<0.01, ***p<0.001

that both groups were similar in various domain of alcohol craving questionnaire. Table 2 shows the comparison both groups on post assessment scores. From this part, is clear that statistically significant difference was found between both groups in the domain of alcohol craving questionnaire i.e. UDUA (U = 16.50, Z = 2.56, P < 0.01), IUA (U = 06.50, Z = 3.33, P < 0.001), APO (U = 11.50, Z = 2.94, P < 0.01), ARWNO (U = 11.00, Z = 2.98, P < 0.01), LCOU (U = 11.00, Z = 2.99, P < 0.01).

Looking at the provided mean value, standard deviations, U value, Z value and significance level, it is evident that the participants in group therapy had scored low on all the domains of alcohol craving questionnaire. It indicates towards the significant effect of group therapy in reducing the craving of individuals with alcohol dependence.

Another part of Table 2 shows the comparison between both the groups on follow up assessment scores in various domain of ACQ. On this front, statistically significant difference was found between both the groups in the domain of ACQ i.e. "Urges and Desires to Use Alcohol"(U = 13.00, Z = 2.28, P < 0.01), Intent to Use Alcohol (U = 11.50, Z = 2.93, P < 0.01), Anticipation of Positive Outcome (U = 9.00, Z = 3.15, P < 0.01), Anticipation of Relief from Withdrawal and Negative Outcome(U = 9.50, Z = 3.08, P < 0.01), Lack of Control Over Use (U = 11.50, Z = 2.93, P < 0.01).

Follow up assessment mean value, standard deviations, U value, Z value and significance level indicates that even on follow up, participants in group therapy scored lower on all the domains of ACQ which proves that group therapy was proved to be beneficial in controlling the level of craving during post assessment which was maintained for longer durations.

Table 3 shows the comparison between baseline and post-assessment scores across both the groups. First part of the table shows the comparison between baseline and post scores of treatment as usual group plus group therapy where that significant difference was found between baseline assessment scores and post scores assessment on the various domains of ACQ i.e. Urges and Desires to Use Alcohol (Z = 2.80, P < 0.01), Intent to Use Alcohol (Z = 2.81, P < 0.01), Anticipation of Positive Outcome (Z = 2.52, P < 0.01), Anticipation of Relief from Withdrawal and Negative Outcome (Z = 2.80, P < 0.01), Lack of Control Over Use (Z = 2.82, P < 0.01). These findings suggest that after group therapy, the TAU + GT group showed significant reduction in alcohol craving.

Second part of the table shows the comparison between baseline and post score of treatment as usual group. From this part of the table. it is evident that no statistically significant difference was found between baseline assessment scores and post assessment scores of treatment as usual group which indicates that this group did not improve on

Table-3: Comparison between Baseline and Post-assessment scores across both the groups

Variable	Group (Mean ± SD)		Mean Rank		Z
	Base line	Post	Negative Ranks	Positive Ranks	
			TAU+GT Group		
UDUA	20.60 ± 2.67	11.20 ± 1.98	5.50	00.00	-02.80**
IUA	19.30 ± 1.49	13.60 ± 1.83	5.50	00.00	-02.81**
APO	26.30 ± 4.16	22.30 ± 1.82	4.50	00.00	-02.52**
ARWNO	28.60 ± 2.22	13.70 ± 3.46	5.50	00.00	-02.80**
LCOU	29.50 ± 1.90	13.40 ± 2.31	5.50	00.00	-02.82**
			TAU Group		
UDUA	20.50 ± 3.95	13.90 ± 1.79	5.50	00.00	-02.80**
IUA	20.60 ± 2.41	16.70 ± 1.33	5.50	00.00	-02.82**
APO	27.40 ± 2.17	25.90 ± 2.18	5.00	00.00	-02.71**
ARWNO	28.00 ± 1.94	18.60 ± 2.22	5.50	00.00	-02.81**
LCOU	28.40 ± 1.42	17.20 ± 2.04	5.50	00.00	-02.81**

NS= Not Significant, **p<0.01

the measures of craving rather they showed a slightly increased score.

Table 4 shows the comparison between post and follow up assessment scores across both the groups for which Wilcoxon Signed Rank Test was used for both groups. Results of both parts of the table indicates that no significant difference was found between the post and follow up scores across both groups and none of the groups showed further improvement or worsening of craving on follow up in comparison of post assessment. Further both the groups maintained their previous position in terms of craving. While group therapy showed stability in improvement or gains previously achieved in the TAU + GT group whereas the TAU group maintained their craving and did not further deteriorate.

Discussion

Present study was conducted to assess the significance of group therapy in minimizing the level of alcohol craving among individuals with alcohol dependence syndrome. In this study, it was found that the TAU + GT group improved significantly on all the domains of ACQ i.e. Urges and Desires to Use Alcohol, Intent to Use Alcohol, Anticipation of Positive Outcome, Anticipation of Relief from Withdrawal and Negative Outcome and Lack of Control Over Use after completion of therapy. At the post-assessment phase, they showed significant improvement on all of these domains. This proves that group therapy proved to be effective in minimizing the level of craving among individuals with alcohol dependence syndrome. Significant difference was found between both the groups on all the domains of ACQ at post assessment phase whereas the TAU + GT group scored significantly lower in comparison to the TAU group. This finding again supports the significance of group therapy in minimizing the level of craving for alcohol.

Comparison between both the groups in the follow up phase revealed that the TAU + GT group scored significantly lower on all the domains of ACQin comparison to the TAU group which suggests that group therapy was effective in minimizing alcohol craving.

Comparison between both the groups on baseline and post-assessment scores suggests that at post assessment phase, the TAU + GT group showed significant decline in alcohol craving as compared to the TAU group. Further, no significant differences were found between both the groups on different scores of post assessment and follow up assessment. This finding indicates that none of the groups showed significant changes in alcohol craving and previous position was maintained in both the groups. The reason seems to be that after post assessment, both the groups maintained more or less same status. The TAU + GT group though did not improve further, but maintained the therapeutic gains that were achieved due to the therapeutic

Table-4: Comparison between Post-assessment and Follow-up Scores on Alcohol Craving Questionnaire across both the groups

Variable	Group (Mean ± SD)		Mean Rank		z
	Post	Follow up	Negative Ranks	Positive Ranks	
TAU+GT Group					
UDUA	11.20 ± 1.98	11.40 ± 2.01	4.00	3.25	-00.54(NS)
IUA	13.60 ± 1.83	13.20 ± 2.09	4.50	4.50	-01.41(NS)
APO	22.30 ± 1.82	21.80 ± 1.68	4.20	3.50	-01.26(NS)
ARWNO	13.70 ± 3.46	13.70 ± 3.19	4.80	5.25	-00.18(NS)
LCOU	13.40 ± 2.31	13.80 ± 1.68	3.50	5.10	-01.10(NS)
TAU Group					
UDUA	13.90 ± 1.79	14.60 ± 1.83	4.00	5.29	-01.81(NS)
IUA	16.70 ± 1.33	16.40 ± 2.11	6.20	4.80	-00.36(NS)
APO	25.90 ± 2.18	25.40 ± 1.89	4.67	4.00	-01.50(NS)
ARWNO	18.60 ± 2.22	17.80 ± 1.39	5.75	3.50	-01.46(NS)
LCOU	17.20 ± 2.04	16.80 ± 1.81	4.75	5.50	-00.73(NS)

NS= Not Significant,UDUA= Urges and Desires to Use Alcohol, IUA= Intent to Use Alcohol, APO= Anticipation of Positive Outcome, ARWNO= Anticipation of Relief from Withdrawal and Negative Outcome, LCOU= Lack of Control Over Use

intervention program at the post assessment and follow up phase. Similarly, TAU group also maintained the post assessment status on follow up assessment.

Ludwig et al[8] suggested that at low doses, alcohol has a priming effect, known as "First Drink" phenomenon and priming proved to be instrumental in increasing the subjective phenomenon of craving.[9] An association between "kindling" and craving has also been postulated based on neuronal super sensitivity on animal models.[10] Craving can also be seen as an aspect of a prolonged subclinical abstinence or withdrawal syndrome.[11-15]

Numerous studies focused on group therapy as a formal intervention strategy minimizing alcohol craving in individuals with alcohol dependence but similarity were found between different techniques and group therapy i.e. Exposure Response Prevention (ERP), Cognitive Behavior Therapy (CBT) and Motivational Enhancement Therapy (MET).

Marlett and Witkiewitz[16] conducted a study on relapse prevention for alcohol and drug problems, using Exposure and Response Prevention (ERP). The effectiveness of ERP in reducing the psychological and physiological response to substance stimuli and minimizing craving.

Another similar study was conducted by Pollack et al[17] on "A novel Cognitive Behavioral Approach for Treatment Resistant Drug Dependence" and studied the efficacy of cognitive behavior therapy on decreasing craving.

Findings of the present study supports the use of group therapy in minimizing alcohol craving in individuals with alcohol dependence however, the study has certain limitations. The sample size was small due to which parametric analysis could not be done despite randomized control design and further, only male patients were selected for the study which limits its generalization for female group. Further research is required on larger sample size and applicability to different population or other category of substance use disorders is also needed.

Conclusion

The study confirms difficulties of controlling craving in individuals of alcohol dependence before intervention. After received group therapy and the regular follow-up in out-patient setting enables the patients achieve complete abstinence, thereby improving their desire craving.

Future direction and limitations

Findings of the present study supports the use of group therapy to reduce craving in individuals with alcohol dependence however, the study has certain limitations. The sample size was small due to which parametric analysis could not be done despite randomized control design and further, only male patients were selected for the study which limits its generalization for female group. Further research is required on larger sample size and applicability to different population or other category of substance use disorders is also needed.

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Original Article

Public Lectures In Psychiatry: An Highly Beneficial Yet Cost-Effective Tool

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ABSTRACT

Background*: the global burden of neuropsychiatric disorders is rising, but there are still large percentage of people who are not aware of the morbidities associated with it. WHO and NAMI are promoting educational campaigns to bring for the factors causing the treatment gap and developing interventions to bridge that. The current study aims to gather the information regarding various interventions and awareness programs and to summarise the effectiveness of them. Methods: online database like Pubmed, Embase and Psycinfo were used to review the various studies highlighting the role of awareness programs related to mental illness in various countries.* ***Results****: Results can be interpreted as awareness programs being an effective tool to deal with the stigma associated with mental illness. Many studies have been conducted by using a pre and post evaluation for attitude of people with regard to the mental disorders and results are pointing towards modest increase in awareness and positive attitude.* ***Conclusion****: Public lectures with an aim to improve the awareness and in long run bridging the treatment gap can be seen as an highly beneficial yet cost effective tool.*

Keywords: *Lectures, Public, Awareness, Stigma, Treatment gap*

Introduction

Mental health is a major concern all over the world as global burden of neuropsychiatric disorders is approximately 14%[1] Advances have been made in improving the mental health of people all over the world and India. However due to multiple factors, the development in addressing this burden is not at a pace at which it is required.

In India, 150 million people aged 18 and above need mental health services as revealed by the National Mental Health Survey but unfortunately less than 30 million actually seek treatment.

The difference between the true prevalence and treated prevalence of a disorder is called the treatment gap.[2,3] Numerous factors are responsible for maintaining treatment gap like stigma, discrimination, lack of health care awareness, lack of health literacy and lack of resources. The restricted social participation by people who are suffering from mental illness by themselves or are caregivers needs to be addressed in order to uplift the society from the burden of psychiatry illness.

The stigma in people could be in form of internalised stigma, making a negative impact on self , interaction with others making recovery difficult or personal stigma, where one is stigmatised towards people with mental illness or perceived stigma, incorporating beliefs about social attitude towards mental illness or public stigma, making thick discrimination towards people with mental illness.[4,5]

Who and NAMI have started global campaigns to address the issue of stigma as majority of the affected people go unnoticed or don't visit Psychiatrist due to stigma or fear of being judged. Various countries have adapted educational programs to benefit people and have shown positive results. The

current study aims to review the various interventions in terms of educational programs or awareness programs to lift the stigma associated with mental health and to conclude the possible role of Public Lectures in the same.

Methods

Relevant studies were identified through a systematic search of the Embase, PsycInfo, and Pubmed databases. Inclusion criteria were the studies narrating the factors associated with poor awareness of people regarding mental health. The various studies describing the role of educational programs and other interventions aimed to target the factors associated with it were also included.

Results

Many countries are trying to bridge the gap between the patients and practioners. The treatment gap in mental health may be addressed by following a public health approach as has been successful with diseases like tuberculosis and poliomyelitis in India. The following components of mental health awareness as described by Jorm in 2000[6] are promising in addressing this gap in mental health can be summarised as (a) Ability to recognise psychological distress (b) Knowledge and beliefs about causes (c) Knowledge and beliefs about self help (d) Knowledge and beliefs about professional help (e) Attitudes that facilitate recognition and help seeking (f) Knowledge of how to seek mental health information.

Bauman[7] in his publication in 2007, describing individual with mental illness as stranger, talked about the stigma associated with mental illness and how it affects the life of people with mental illness. While describing the causes of stigma, the concept of evolution and social psychology considering oneself with a higher self worth then those with mental illness comes into play.

There are numerous factors associated that promotes stigma like poor interaction of individuals with mental illness with society due to their inability to interpret affective responses of people in front of them, a feeling of danger associated with them, not being able to hold any responsibility for themselves and others, cultural norms like having mental illness as a punishment of past sins or deeds and misconception that it can never be treated.

When talking about the cultural factors, studies[8,9] have identified the following as cultural factors pertaining to Asian countries: (a) Psychiatric illness are considered to be part of physical illness. They don't believe there exist something kwon as diseases of the mind and related everything to bad food or water or lack of rest. (b) People consider only psychosis as mental illness and ignore neurosis as they perceive only the people with aggression, agitated, hallucinatory behaviour as in need of treatment. Depressive and anxiety symptoms are considered as part of life, not illnesses. (c) Existence of supernatural, religious or magical beliefs as causes as well as treatment for psychiatric illness. They believe in faith healers more than anything and spend the entire illness time visiting them. (d) More stigma associated with chronic, irreversible and relapsing conditions as results of punishments of sins committed. People in Asian countries believe that if person is not benefiting from treatment, nothing is wrong with his noncompliance or psychosocial stress, but he is liable to deserve the illness due to the sinful deeds he did in his past life.

Even in India,[8,9] basic traditions or folks consider illness attributable to supernatural cause making patients visit traditional faith healers in every phase of illness, be it during initial presentation when family members are not aware of the root cause of illness, during treatment when they find little or no effect from the treatment and even after stopping the treatment to clarify their doubts. Prevalence and belief towards Ayurvedic treatment makes patients visit them who attribute illness as a result of humoral imbalance. Some specific culture bound syndrome like Dhat is more prevalent in India due to specific cultural beliefs.

The various approaches towards promoting public awareness can be summarized as follow, a per review by Dumesnil et al.[10]

1. *Short media campaigns:*

Television series: You in mind (1987, UK)- topics like overcome your depression, overcome your fears and express your feelings to make people aware of mental illness and teaching coping skills.

Norwegian Mental Health Program (1992, Norway)- information about means of prevention and treatment of mental disorders.

2. *Gatekeeper training:*

Training in mental health first aid (2001-04, Australia)-special focus on crisis intervention, risk evaluation and guidance.

Depression Awareness Research Project (2001-04, Australia)-promoting care seeking in Depression

3. *Long National programs:*

Defeat Depression compaign (1992-96, UK)-specially focused on depression.

Changing Minds (1998-2002, UK)-focused on reducing stigma and discrimination.

Community Awareness Program (1995, Australia)-spreading awareness and reduce discrimination.

Beyond blue (2001-05, Australia)- awareness about depression.

Like Minds, like Mine (1997-2004, New Zealand)-reducing stigma and discrimination a/w mental disorders.

See mee (2002-04, Scotland)- aimed to stop stigmatization and discrimination

4. *Long local or Community programs:*

Defeat Depression compaign (1999-2002, Hong Kong)-awareness related to depression.

Compass strategy (2001-03, Australia)-special focus on young people aged 12-25.

Suicide Prevention Week (1991, Canada)-focussed on suicide prevention and help seeking.

Suicide Prevention Week (1999-2001, Canada)-public and professional awareness of suicide.

Nuremberg Alliance Against Depression (2001,Germany)-on topics of depression and suicide.

Other types of interventions narrated by Maulik et al:[11] (a) by means of printed IEC (Information, Education and Communication) materials: having pamphlets, posters and brochures explaining signs and symptoms of various mental disorders in local language of community. (b) considering a talk with a person already suffering from a mental illness to share his story and coping strategies to deal with it. (c) Promotional audio-visual tapes focussing on stigma, awareness, need for treatment, etc. (d) short skits or dramas by students or local theatre persons.

For promoting literacy about the mental health, numerous ideas and policies have been undertaken by many states of India as well. One of the approach in Maharashtra is Atmiyata intervention approach.[12] The target population was rural community of Maharashtra with an aim to promote access of people with mental illness to health care delivery systems, promote well being as well as awareness among rural communities by volunteers called Atmiyata champions and mitras. They also included films and apps to implement their intervention.

Tanoka et al[13] reported the effectiveness of educational program on public attitude towards mental illness by using Mental Illness and Disorder Understanding Scale and the Scale of Negative Attitudes Towards the Independence of People with Mental Disorders. The study compared the scores pre and post lectures and results found significant improvement in attitude of people towards mental illness in most of the groups by lecture lasting merely $1^{1/2}$ hours. His study results are in accordance with earlier studies published by various others authors including the publication by Wolff et al[14,15] comparing the attitudes of people residing in area where education campaign takes place to an area where it doesn't.

Yakushi et al[16] established in usefulness of educational lecture in depression in Japan in terms of decreasing stigma associated with depression and suicide and promoting awareness in common people. The education lecture do have impact on people, might have less durable effects but with consistent and continuous efforts, these positive results can be rooted deep in people and they will start accepting the need for treatment.

The Systemic Medical Appraisal Referral and Treatment (SMART) medical health project, for increasing the use of services in mental health by people belonging to rural area of India proved out to be an effective tool for screening and treating people. The concept of mobile based services of mental health came out to be effective.[17]

Conclusions

Public Lecture (PL) is essentially a speech open to public in imparting the scientific education and knowledge. PL plays a major role. The public lecture given by Sir Humphry Davy at the Royal Institution was so popular that it used to cause traffic problems at Albemarle street in London.[18]

Public lecture is an extremely cost effective yet highly useful tool in providing the holistic care to

the sufferers of psychiatric disorders.

Public lecture helps to keep abreast of public concerns, suggestions and expectation and solving plus supporting real world problem. Consequently, quality care of mental patients takes upward shift.

1. Helps to share responsibly of case behaviour attached with mental illness and their families and mental health service provider.
2. It builds up trust and understanding of mental illness.
3. Helps in fighting stigma and discrimination related to mental illnesses
4. Facilitating the accessibility to mental health to public.
5. Public lecture stimulates creativity and innovation.
6. Better understanding develops about wider social concerns as well as personal issues.
7. Sometimes public lectures generate unforeseen outcomes stimulating introspection to enhance further learning.
8. Inculcating the basic public speaking skills in post-graduate students.

The Department of Psychiatry, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi has started regular public lectures on weekly basis at the waiting area of psychiatry OPD. Topics are chosen specially to attract the patients, families and public like stigma of mental illness, sleep hygiene, depression- identification and management, positive mental health etc. The public response has been quite encouraging but limited to persons already dealing with mental illness.

From Feb 2019, taking the advantage of working in a multi-speciality big government hospital, public lectures on mental illness have been started in other departments like medicine, medical oncology, cancer-surgery, cardiology, physical rehabilitation etc. Questions are invited and people are encouraged to speak for enhancing public engagement.

In short, PL is an essential medium to bridge the treatment gap. In the modern era of online culture, people are desperate to look for face to face conversations. PL simply opens new gate of opportunities for therapists as well as sufferers in the field of mental health.

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Original Article

Role of Group Therapy in the Enhancement of Social Skills in Schizophrenia

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ABSTRACT

Background: *In this study, we assessed the role of group therapy in the enhancement of social skill in schizophrenia.* ***Materials and methods****: The study was cross-sectional hospital based study. 20 patients diagnosed with schizophrenia according to ICD-10 DCR were chosen from different inpatient departments of RINPAS, Kanke using the random sampling technique. After taking informed consent from the patients. Socio-Demographic and Clinical Data Sheet, PANSS and social skill checklist were used for the assessment. After completion of the therapy sessions, post assessment was done and the follow up assessment completed after three months of post assessment. The Statistical Package for Social Sciences (SPSS) 20.0 for windows was used for statistical analysis with the help of Mann-Whitney U test, Wilcoxon Sign Rank test and Chi-square test.* ***Results and Conclusion****: Result revealed that there were significant differences found in the scores of social skill training between experimental and control group after intervention. Major finding of this study shows that social skill training improves social skill in schizophrenia.*

Keywords: *Group therapy, Social skill training, Schizophrenia.*

Introduction

Schizophrenia is one of the most chronic disabling serious mental illnesses. Persons with schizophrenia have the deterioration in personal, family, and social life. The illness leads to many disabilities in terms of interpersonal skills, communication skills, coping skills, dealing with emotions, self-care, self-control, occupational skills. Impairments in social functioning are among the most debilitating and treatment refractory aspects of schizophrenia.[1] Several studies have reported social skills deficits interfere with the development of appropriate social relationship and the acquisition of social skills. Schizophrenia often strikes first in late adolescence or young adulthood, a critical period for mastery of adult social roles and skills, such as dating and sexual behaviors, work related skills, and the ability to form and maintain adult relationships.[2] Social skills training are set of systematic techniques and strategies useful for teaching interpersonal skills that are based in social learning theory.[3] Social skills training is a collection of strategies aimed to improving the quality of patient´s interpersonal communication and relationships and may help them to more effectively obtain social support in time of distress.[4] A several reviews show that social skills training can be effective in increasing patients´ social skills and at reducing their psychiatric symptoms.[5-7] Social skills training aims to help individuals with serious and persistent mental disabilities to "perform those physical, emotional, social, vocational, familial, problem-solving, and intellectual skills needed to live, learn and work in the community with the least amount of support from agents of the helping

professions".[8]

Material and Methods

Sample:

After various inclusion and exclusion criteria, the patients were selected from the inpatient departments of RINPAS, Kanke, Ranchi, Jharkhand through purposive sampling technique. 24 patients were selected for social skill training. In due course of time, four patients were excluded - two were not co-operative for training and two were pre maturely discharged from the hospital on care-givers request, hence final analysis was done with only 20 individuals and duration of their illness was less than 2 years. Both groups were matched in the socio-demographic characteristics and clinical variables. Patients were in the age range of 25 to 35 years. A pre-test and post test with control group design was used in this study. Equal numbers of patients were randomly assigned to Experimental and Control group.

Measures

Socio-Demographic and Clinical Data Sheet: It is semi-structured, self-prepared performa especially drafted for this study. It will consist of all areas of socio-demographic details like age, sex, domicile, education, employment, marital status etc., and questions related to nature of illness, substance dependence, co-morbid psychiatric disorder, age of onset of illness, duration of illness, hearing and visual impairment and severe physical illness in the near past.

The Positive and Negative Syndrome Scale (PANSS)

PANSS is a 30-item rating instrument evaluating the presence/absence and severity of positive, negative and general psychopathology of schizophrenia. This evaluates the patient, based on the severity of positive, negative, and general psychopathological features. The scale was developed from the BPRS and the Psychopathology Rating Scale. All 30 items are rated on a 7-point scale (1 = absent; 2 = minimal; 3 = mild; 4 = moderate; 5 = moderate to severe; 6 = severe; 7 = extreme). It takes 30-40 minutes to complete. Alpha coefficient analysis indicated high internal reliability and homogeneity among item with coefficient ranging from .73 to .83 for each of the scale.[9]

Self-developed Social skill checklist

The social skill checklist is designed as a quick measure of the person social skills and social functioning over the past month the checklist is to be completed at baseline and at 6 week intervals during the group therapy intervention. There are 14 skills in the checklist including communication, assertiveness, conversation, hygienic condition, interpersonal relationship etc.The clinician asked to check off the frequency with which the person uses each skill ("not at all or rarely", "some of the time", "often or most of the time".

Procedure

Patients were selected from different wards as per the inclusion and exclusion criterions. Sample was selected to the experimental and control group according to the sample recruitment procedure. Socio-demographic data was collected from this patient. After that social skill checklist was administered to both the groups. 10 patients were involved in group therapy for approximately 12 sessions of weekly twice- thrice for about 60-90 minutes duration. The second group was control group and asked to follow routine work. After the intervention both the group was administered again with social skill checklist. Both groups were assessed on different outcome variable first before beginning of the therapy, second after six week and then lastly after three months.

Statistical Analysis

As sample size in this study was small, hence obtained data was analyzed by using non–parametric statistics, namely, Chi-square test, Mann Whitney U test (for between group comparison) and Wilcoxon Sign Rank Test (for within group comparison).

Results

Table 1 shows the comparison of two groups, i.e. experimental group (GT = TAU) and Control Group (TAU) in relation to socio-demographic parameters. These two groups had not significant difference found on any socio-demographic parameters, i.e. domicile, education, occupation, religion and family Income.

Table 2 shows the comparison between

Table-1: Comparison between Experimental and Control Group on Socio-Demographic Variable (Category Variables)

Variable		Group N = 20			
		Experimental Group	Control Group		
		(N=10) (%)	(N=10) (%)	*Df*	χ^2
Domicile	Rural	(10) 100%	(7) 70%	1	3.529 (NS)
	Urban	(0)	(3) 30%		
Marital status	Married	(5) 50%	(5) 50%	1	0.000 (NS)
	Unmarried	(5) 50%	(5) 50%		
Education	Below matric	(5) 50%	(3) 30%	2	1.833 (NS)
	Matric	(2) 20%	(1) 10%		
	Above matric	(3) 30%	(6) 60%		
Occupation	Employed	(7) 70%	(7) 70%	1	.000 (NS)
	Unemployed	(3) 30%	(3) 30%		
Religion	Hindu	(9) 90%	(9) 90%	1	.000 (NS)
	Islam	(1) 10%	(1) 10%		
Family income	UptoRs 5000	(1) 10%	(2) 20%	2	.400 (NS)
	UptoRs 10000	(8) 80%	(7) 70%		
	Above Rs 10000	(1) 10%	(1) 10%		

NS = Not Significant

Table-2: Comparison between Experimental group and Control group at baseline on PANSS and Social Skill Checklist scores

Variable	Group (Mean ± SD)		Mean Rank		U	Z
	Experimental Group	Control Group	Experimental Group	Control Group		
Positive	25.6 ± 2.01	25.0 ± 2.53	11.30	9.70	42.00	- .614(NS)
Negative	25.3 ± 2.21	25.4 ± 4.00	10.25	10.75	47.50	-.190(NS)
General Psychopathological Features	48.50 ± 3.53	49.6 ± 2.59	9.60	11.40	41.00	-.685(NS)
Social Skill training						
Social Skill training	18.30 ± 1.76	18.00 ± 1.49	11.10	9.90	44.00	- .461(NS)

NS= Not Significant

Experimental and Control groupon PANSS andSocial Skill checklist. It is evident from the table that before the intervention both the group was comparable or equivalent in terms of psychotic symptoms and social skills.

Table 3 shows the Comparison between Experimental group and Control group on PANSS and Social Skill Training scores at post intervention assessment. It is evident from the table that ACT + TAU group outperformed or showed statistically significant improvements on PANSS positive (U = 13.50, Z = 2.77, $p < 0.01$) and its negative (U = 22.00, Z = 2.13, $p < 0.05$) and general psychopathology (U = 16.50, Z = 2.55, $p < 0.01$) domains, similarly, this group showed statistically significant improvement on social skills as measured by social skills training checklist (U = 17.50, Z = 2.47, $p < 0.05$).These findings indicate that experimental group is more efficacious than control group.

Table 4 shows the Comparison between Experimental group and Control group at follow-up on PANSS and Social Skill Training scores. It is evident from the table that experimental group outperformed or showed statistically significant improvements on PANSS positive symptoms (U = 09.50, Z = 3.07, $p < 0.01$), negative symptoms (U = 00.00, Z = 3.79, $p < 0.001$), and general

Table-3: Comparison between Experimental group and Control group on PANSS and Social Skill Training scores at post intervention phase

Variable	Group (Mean ± SD)		Mean Rank			
	Experimental Group	Control Group	Experimental Group	Control Group	U	Z
Positive	15.7 ± 2.31	19.60 ± 2.75	6.85	14.15	13.50	-2.77**
Negative	19.8 ± 1.75	23.00 ± 3.29	7.70	13.30	22.00	-2.13*
General Psychopathological features	39.0 0 ± 4.44	44.00 ± 2.30	7.15	13.85	16.50	-2.55**
Social skill Training						
Social skill Training	25.10 ± 2.13	21.50 ± 3.10	13.75	7.25	17.50	- .2.47*

*Significant at p<0.05, **Significant at p<0.01

Table-4: Comparison between Experimental group and Control group at follow-up on PANSS and Social Skill Training scores

Variable	Group (Mean ± SD)		Mean Rank			
	Experimental Group	Control Group	Experimental Group	Control Group	U	Z
Positive	14.10 ± 2.02	19.00 ± 2.86	6.45	14.55	9.50	-3.07**
Negative	15.00 ± 2.86	21.10 ± 2.28	5.50	15.50	0.00	-3.79***
General Psychopathological features	32.20 ± 3.15	40.80 ± 2.14	5.65	15.35	1.50	-3.67***
Social Skill Training						
Social Skill training	25.30 ± 2.21	21.80 ± 2.65	13.90	7.10	16.00	-2.58**

Significant atp < 0.001, **Significant at **p < 0.01,

psychopathology (U = 1.50Z = 3.67, p < 0.001) domains respectively, similarly, this group showed statistically significant improvement on social skills as measured by social skills training checklist (U = 16.00, Z = 2.58, p < 0.01). These findings indicate that experimental group was more effective than control group. Patients received social skills training outperformed on most of the variables even on follow up.

Table 5 shows comparison between baseline scores and post intervention scores on PANSS within both groups. It is evident from the table that both groups showed statistically significant improvements on post assessment in comparison to their respective baseline scores but improvement in intervention group was more significant in terms of positive symptoms and general psychopathology. Intervention group observed statistically significant differences on PANSS positive symptoms (Z = 2.82, p < 0.01), negative symptoms (Z = 2.82, p < 0.01) and on general psychopathology (Z = 2.80, p < 0.01) and social skills training (Z = 2.68, p < 0.01). Similarly, TAU group also reported significant improvement on PANSS total (Z = 2.84, p < 0.01), positive symptoms (Z = 2.83, p < 0.01), and on general psychopathology (Z = 2.80, p < 0.01) and social skill training (Z = 2.49, p < 0.05)as compared to baseline score. These findings indicate that experimental group had more improvement in psychopathology and social skills as compared to control group.

Table 6 shows the comparison between post and follow up-assessment scores across both the groups. It is evident from the table that both groups showed statistically significant improvement on follow up assessment as compared to their respective post scores. Intervention group showed significant improvement on PANSS positive symptoms (Z = 2.54, p < 0.01), negative symptoms (Z = 2.84, p < 0.01) and in general psychopathology (Z = 2.82, p < 0.01). Similarly, control group showed significant improvement on PANSS negative

Table-5: Baseline-post comparison on PANSS and Social Skill Training scores across both groups

Variable	Group (Mean ± SD)		Mean Rank		
	Baseline	Post	Negative Ranks	Positive Ranks	Z
		Experimental Group			
Positive	25.6 ± 2.01	15.7 ± 2.31	5.50	00.00	-2.82**
Negative	25.3 ± 2.21	19.8 ± 1.75	5.50	00.00	-2.82**
GPF	48.50 ± 3.53	39.0 0 ± 4.44	5.50	00.00	-2.80**
Social skill training					
Social skill training	18.30 ± 1.76	25.10 ± 2.13	0.00	5.00	-2.68**
Control Group					
Positive	25.0 ± 2.53	19.60 ± 2.75	5.50	00.00	-2.84**
Negative	25.4 ± 4.00	23.00 ± 3.29	5.50	00.00	-2.83**
GPF	49.6 ± 2.59	44.00 ± 2.30	5.50	00.00	-2.80**
Social skill training					
Social skill training	18.00 ± 1.49	21.50 ± 3.10	1.50	5.44	-2.49*

Significant atp<0.01, *Significant at *p<0.05,

Table-6: Comparison between post and follow up on PANSS and Social Skill Training scores across both groups

Variable	Group (Mean ± SD)		Mean Rank		
	Post	Follow-up	Negative Ranks	Positive Ranks	Z
		Experimental Group			
Positive	15.7 ± 2.31	14.10 ± 2.02	4.50	.00	-2.54**
Negative	19.8 ± 1.75	15.00 ± 2.86	5.50	.00	-2.84**
GPF	39.0 0 ± 4.44	32.20 ± 3.15	5.50	.00	-2.82**
Social skill training					
Social skill training	25.10 ± 2.13	25.30 ± 2.21	4.88	5.10	-.360(NS)
		Control Group			
Positive	19.60 ± 2.75	19.00 ± 2.86	4.08	5.75	-.920(NS)
Negative	23.00 ± 3.29	21.10 ± 2.28	5.31	2.50	-2.39**
GPF	44.00 ± 2.30	40.80 ± 2.14	5.00	.00	-2.69**
Social skill training					
Social skill training	21.50 ± 3.10	21.80 ± 2.65	4.00	5.80	-.812(NS)

NS= Not significant, **Significant at**p<0.01.

symptoms ($Z = 2.39$, $p < 0.01$) and in general psychopathology ($Z = 2.69$, $p < 0.01$). These findings indicate that experimental group brought equal or more improvement in psychopathology as compared to control group.

Discussion

The results of the present study reveal that patients with schizophrenia were able to acquire social skills training. After completion of therapy,it was found that the Experimental group improved significantly as compared to control group in all the areas i.e. assertiveness, communication, personal hygiene, conversation etc. included in social skills training checklist. The present study proves that group therapy enhanced social skill in schizophrenia.

Similarly, the studies[10] on Social skills training (SST) involve the use of standard behavioral skills procedures to develop social competencies, and has been used for over three decades in an attempt to remediate poor social skills in schizo-phrenia patients. Also the results of present study are consistent with the findings of Galderisi et al,[11] that after 6 months of treatment personal and social functioning was significantly better in patients assigned to social skills. Within the same context researcher added that the patients schizophrenia have particularly difficulty with the social skills of interpersonal relations, assertiveness, expression of thought and feeling.

Another study conducted by Khalil,[12] found that there was a significant difference between pre and post assessment data of experimental group as

regarding all item of psychosocial skill training ($P < 0.05$). This study also indicated that effectiveness of social skill training program in improving the social skills of the experimental group.

Another study[13] concluded that social skills training resulted in greater improvement in certain measures of social adjustment than supportive group therapy. The greatest improvement in social outcomes occurred when social skills training was combined with a pharmacological strategy of active drug supplementation at the time prodromal worsening of psychotic symptoms was first observed. this study was also similar to current study. Another study conducted by Padmavathi et al,[14] described about the effectiveness of conversational skill training of patient with schizophrenia. In his study, The pre-test finding have shown that there has been no difference in the conversational skill ability between the experimental group and control group. The post-test finding has revealed that the conversational skill training by role play method has improved the conversational ability in the experimental group.

Comparison between both the groups in the follow up phase revealed that Experimental group scored significantly in comparison to the control group which suggests that group therapy was effective. Study related with the previous study,[14] the prevalence of social skill deficits in schizophrenia was examined by comparing patients assessed over 1 year period with a group of non-patient controls recruited from the community. Social skills were assessed using a role play test and were considered deficient when they were below the range of the control sample. Approximately 50% of the patients were consistently unskilled over the one year, whereas 11% were consistently skilled. Deficits in specific social skills were relative rare. Consistent deficits were present for only one of six specific skills 14% of the patients was consistently less appropriate in their conversation.[15]

Kapse and Nirmala[16] found that significant amount of deficits in self care, instrumental skills, communication skills, impulse control and social functions of the participants. Post social skills training programme, there was significant improvement in social skills. The repeated measures show significant level of change in social skills in post 1 and post 2 test. Results show the efficacy of social skills training in improving social skills among persons with schizophrenia who are availing day care rehabilitation facility.

Comparison between both the groups on baseline and post-assessment scores suggests that at post assessment phase, experiment group showed significant difference as compared to the control group. Further, no significant differences were found between both the groups on different scores of post assessment and follow up assessment. This finding indicates that none of the groups showed significant changes in social skill and previous position was maintained in both the groups. The reason seems to be that after post assessment, both the groups maintained more or less same status. The experimental group though did not improve further, but maintained the therapeutic gains that were achieved due to the therapeutic intervention program at the post assessment and follow up phase. Similarly, control group also maintained the post assessment status on follow up assessment. Bellack[17] reviewed 12 meta-analytic and narrative reviews of social skills training and concluded that social skills training does not reduce or prevent relapse; but does improve targeted behavioral skills; seems to have a positive impact on social role functioning, although results are inconsistent in this regard; and improves patient´s sense of self-efficacy with targeted social situations after training. The approach is most effective when it is in embedded in a broad, comprehensive rehabilitation program.[18] Another similar study conducted by Liberman et al[19] compared the community functioning of outpatients with persistent forms of schizophrenia after treatment with psychosocial occupational therapy or social skills training, with the latter conducted by para-professionals. Eighty outpatients with persistent forms of schizophrenia were randomly assigned to receive either psychosocial occupational therapy or skills training for 12 hours weekly for 6 months, followed by 18 months of follow-up with case management in the community. Results show that the patients who received skills training showed significantly greater independent living skills during a 2-year follow-up of everyday community functioning.

Finding of the present study supports the results of Amiri et al[20] who investigated the efficacy of cognitive-behavior therapy and social skill trainings on reduction of negative symptoms of schizophrenic

patients. 15 persons were selected for each group and they were randomly assigned to two groups: experimental group (combination of cognitive-behavior group therapy and social skill training) and control group (cognitive-behavior group therapy) After three months the administration of combination program of cognitive-behavior group therapy and social skill training than cognitive-behavior group therapy, the negative symptoms of experimental group decreased significantly. Also, social skills of experimental group were significantly higher than the control group that cause the significant reduction of negative symptoms of schizophrenic patients. The obtained results shows improvement of symptoms of schizophrenia, the efficacy of combination of cognitive-behavior group therapy and social skills is more than cognitive-behavior group therapy.

Findings of the present study supports that role of group therapy improves enhancement of social skill training in schizophrenia.

Conclusion

The use of group therapy is becoming increasingly popular in various psychiatric disorder specifically in schizophrenia. In the present study, the use of group therapy results in improvement of communication, social interaction and conversation. The group process was found to help the patients with self discloser, awareness about himself and his problems, helps in interacting with others and improve their day to day activities.

Limitations

Present study has several limitations such as sample size was small, only male patients were taken for intervention, limited duration and because of short term, we did not know the long term effect of social skills.

Future Direction

A future study with bigger sample size can be undertaken to study. The impact of socio-demographic and clinical variables on the improvement of social skill in patients with schizophrenia.

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Psychomicrobiology

Psychological Aspects of Swine Flu

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Swine influenza is an infection caused by *Swine influenza virus (SIV) or swine-origin influenza virus (S-OIV)* belonging to influenza family of viruses endemic in pigs.[1] As of 2009, the known SIV strains include influenza C and the subtypes of influenza A known as H1N1, H1N2, H2N1, H3N1, H3N2, and H2N3.

The Swine flu was initially seen in humans in Mexico in 2009, where the strain of the particular virus was a mixture from 3 types of strains.[2]

Four states in North India including Rajasthan, Delhi, Punjab and Haryana have been badly hit by the spread of H1N1 virus between January and February, 2019. That is at least five times higher than what was seen last year. Countrywide, 6,701 people have been diagnosed with swine flu with 226 reported deaths in the four states, Only 798 cases were reported during January and February 2018. The true rate of infection may be higher, since most cases only cause a very mild disease, and will probably never be reported or diagnosed.[4]

Signs and Symptoms

The frequent symptoms are fever, nausea, vomiting, diarrhea, headache, lethargy, chills, sneezing, coughing, difficulty breathing, dizziness, abdominal pain and decreased appetite.[5,6]

The complications include - exacerbation of underlying chronic disease; complications related to the upper airways, including sinusitis or otitis; pulmonary complications, including bronchitis, asthma (sometimes with status asthmaticus), and acute exacerbations of chronic bronchitis; and cardiac (myocarditis and pericarditis), myositis, rhabdomyolysis, neurological complications (encephalopathy, encephalitis, seizures), toxic shock syndrome, and secondary bacterial pneumonia.[6,7]

The most common causes of death are respiratory failure, pneumonia (leading to sepsis), high fever (leading to neurological problems), dehydration, electrolyte imbalance, kidney failure.[6-8] Fatalities are more likely in young children and the elderly.[9]

Virology

Of the three *genera* of influenza viruses that cause *human flu,* two also cause influenza in pigs, with *influenza A* being common in pigs and *influenza C* being rare.[10] People who work with poultry and swine, veterinarians and meat processing workers are at increased risk of zoonotic infection.[11]

It is an enveloped spherical virus; the outer layer is a lipid membrane which is taken from the host cell in which the virus multiplies. Inserted into the lipid membrane are "spikes", which are glycoproteins, known as HA (hemagglutinin) and NA (neuraminidase). These are the proteins that determine the subtype of influenza virus (A/H1N1, for example). The HA and NA are important in the immune response against the virus; antibodies (proteins made to combat infection) against these spikes may protect against infection.

Classification

Influenza C

Influenza viruses infect both humans and pigs, but do not infect birds.[12]

Influenza A

Swine influenza is caused by influenza A subtypes H1N1,[13] H1N2,[13] H2N3,[14] H3N1,[15] and H3N2.[13] In pigs, four influenza A virus subtypes

(H1N1, H1N2, H3N2 and H7N9) are the most common strains worldwide.[5]

Diagnosis

The CDC recommends real-time PCR as the method of choice for diagnosing H1N1.[16] The oral or nasal fluid collection and RNA virus preserving filter paper card is commercially available.[17] Diagnosis can be made by sending a specimen, collected during the first five days, for analysis.[18]

Prevention

Prevention of swine influenza has three components: prevention in pigs, prevention of transmission to humans, and prevention of its spread among humans.

Swine

Methods of preventing the spread of influenza among swine include facility management, herd management, and vaccination (WHO)).

Humans

Prevention of pig-to-human transmission

Swine can be infected by both avian and human flu strains of influenza, and therefore are hosts where the antigenic shifts can occur that create new influenza strains.

The transmission from swine to humans can be prevented by wearing face masks, gloves and use of vaccines. Smoking is a risk factor and should be avoided.[19]

Prevention of human-to-human transmission

Influenza spreads between humans through coughing or sneezing, touching the eyes, nose or mouth.[6,20,21] Swine flu cannot be spread by pork products, since the virus is not transmitted through food.[19,20] The swine flu in humans is most contagious during the first five days of the illness, although some people, most commonly children, can remain contagious for up to ten days.

Recommendations to prevent spread among humans include using standard infection control, which includes frequent washing of hands with soap and water or with alcohol-based hand sanitizers[6,19,21] and by disinfecting household surfaces with a diluted chlorine bleach solution.[22] Anyone with flu-like symptoms, such as a sudden fever, cough or muscle aches, should stay away from work or public transportation and gatherings.[20,21]

Vaccination

The U.S. Food and Drug Administration (FDA) approved the new swine flu vaccine for use in the United States on September 15, 2009.[23,24] Studies have shown that a single dose creates enough antibodies to protect against the virus within about 10 days.[24]

Treatment

Swine

As swine influenza is rarely fatal to pigs, little treatment beyond rest and supportive care is required.[25] Vaccination and animal management techniques are most important.

Humans

If a person has swine flu, antiviral drugs can make the illness milder and make the patient feel better faster. They may also prevent serious flu complications. The U.S. Centers for Disease Control and Prevention recommends the use of oseltamivir or zanamivir for the treatment and/or prevention of infection with swine influenza viruses; however, the majority of people infected with the virus make a full recovery without requiring medical attention or antiviral drugs.[26] Beside antivirals, supportive care at home or in a hospital focuses on controlling fevers, relieving pain and maintaining fluid balance, as well as identifying and treating any secondary infections or other medical problems.

Psychological Reactions

In a study by Goodwin et al, initial responses to Influenza A show large regional differences in anxiety, with Malaysians more anxious and more likely to reduce travel and to buy masks and food. Discussions with family and friends may reinforce existing anxiety levels. Particular groups (homosexuals, prostitutes, the homeless) are perceived as at greater risk, potentially leading to increased prejudice during a pandemic. Europeans underestimated mortality of seasonal flu, and require more information about the protection given by seasonal flu inoculation[27].

Using random digit dialing, we sampled 12,965 Hong Kong residents, Cowling et al studied trends in anxiety, risk perception, knowledge on modes of

transmission, and preventive behaviors. Respondents reported low anxiety levels throughout the epidemic. Perceived susceptibility to infection and perceived severity of H1N1 were initially high but declined early in the epidemic and remained stable thereafter. As the epidemic grew, knowledge on modes of transmission did not improve, the adoption of hygiene measures and use of face masks did not change, and social distancing declined. Greater anxiety was associated with lower reported use of hygiene measures but greater social distancing. Knowledge that H1N1 could be spread by indirect contact was associated with greater use of hygiene measures and social distancing.[28]

A study Cowling et al examined the influence of psychological state (depression, negative affect, perceived stress) and social support on pre- and post-vaccination response to influenza vaccine. Social support and perceived stress were correlated with pre-vaccine antibody responses to two of the three vaccine components (HK and NC). Social support was negatively correlated with both pre- and post-vaccine titers to Pan. Depression, positive affect, and negative affect were not related to vaccine response.[29]

The psychological impact of swine flu must be managed at work by focusing on employees as people need to be in place to support managers in the shift from managing objectives, targets and finances, to monitoring levels of anxiety, illness, and possible death among their teams. Working at home is the ideal solution. However, one should be aiming to encourage employees to get authorized facts about the illness for themselves and family members, maintain (or adopt) a healthy lifestyle, which is the best defense against any illness, adopt thorough hygiene habits and seek additional help if they or their families have known health vulnerabilities.[29] By actively communicating with employees in relative calm, managers and organisations will have time to apply a more thoughtful and less anxious plan for managing the worst.[30]

Neuropsychiatric Sequelae

Though influenza infection is common, the exact magnitude of neuropsychiatric sequelae is not known.[31] Influenza-associated neurological manifestations include febrile seizures, Reye's syndrome, acute necrotizing encephalopathy, transverse myelitis, aseptic meningitis,[31-36] Guillian-Barre syndrome,[38] multiple sclerosis,[39] Encephalitis lethargica[40] and Parkinson Disease.[41,42] The psychiatric complications include acute psychosis,[43] schizophrenia in offspring of women contacting influenza in first trimester,[44] mania,[45] mental retardation[46] and progressive dementia.[47]

The neuropsychiatric complications of antiviral drug Oseltamivir (Tamiflu) include GBS, behavioral problems, suicidal tendencies, delirium, mania, bipolar disorder, confusion, nightmares, delusions, hallucinations and convulsions.[48-51] Vaccination can also lead to increased risk of GBS, polyradiculopathy and subclinical myelopathies.[52,53]

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Psychophysiotherapy

Management of Obesity in Children and Adolescents-Psychophysiotherapeutic Approach

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The increasing prevalence of over weight and obesity in adults and children demonstrates a steadily growing epidemic. Obesity has major health and socioeconomic impact, especially in children and adolescents.[1] It is a highly complex, multifactorial disease in which genetic, biological, psychological, behavioral, familial, social, cultural and environmental factors can influence in different ways.[2]

The rising rate is associated with obesity related comorbidities including cardiovascular disease, joint disease, type 2 diabetes as these populations are at greater risk for developing endothelial dysfunction, hypertension, insulin resistance, cholecystolithiasis, non alcoholic fatty liver disease, respiratory and orthopedic disorders, psychosocial or psychiatric problems, chronic pain and lower quality of life.[3,4] Therefore, early prevention and management is required as it affects the quality of life and life expectancy as well.

Definition of Obesity in Children and Adolescents

According to the Centers for Disease Control & Prevention, the threshold for obesity in children and adolescents equals the 95th percentile of the age- and sex-specific BMI in people younger than 19 years.[5]

The World Health Organization proposes different criteria for obesity in children and adolescents: obesity is diagnosed when the BMI is greater than 2 standard deviations above the World Health Organization growth standard median (for ages 5–19 years).[1]

Obesity and Physical Inactivity

Physical inactivity has been shown to be a risk factor for obesity and insulin resistance in school aged children. Several studies suggest that sedentary children are more likely to become sedentary adults and to have increased risks of obesity, diabetes, hypertension, dyslipidemias, and cardiovascular diseases.[6] Although obesity has a complex development involving environmental, physiologic and genetic factors, the basic cause is an imbalance between energy intake and energy expenditure. Increasing physical activity has the potential to improve weight loss and maintenance. Stettler indicates that an increase in sedentary activities, especially television watching and an overall decrease in physical activity are contributing to an increased incidence of overweight and obesity in children and adolescents.[7]

Obesity and Stress

Important psychosocial contributors to obesity may include stressors that trigger emotional eating,[8,9] being bullied, suffering neglect and maltreatment or a living situation where consistency, limit setting and supervision are lacking.[10,11] Children/adolescents under stress are more prone to overeating or emotional eating i.e. eating excessively for comfort. The common stressors that lead to overeating are parental separation/divorce, bullying, physical/mental abuse, competition at school for high grades etc. thus, predisposing the child or adolescent to use food as a coping mechanism.

Chronic stress can also compound poor sleeping

habits, fatigue and a reluctance to engage in regular physical activity at school and home. Inadequate sleep is a known risk factor for obesity.[12] Stress can negatively impact the immune system, increasing the risk of viral upper respiratory infections[13] and further impede consistent physical activity. Stressful living situations including generalized anxiety or depression can stimulate neuroendocrine responses. An activated hypothalamic pituitary axis and sympathetic nervous system may induce intra-abdominal adiposity, insulin resistance and metabolic syndrome through excessive cortisol production.[14]

Physical and Psychological Impact of Obesity

Weiss et al demonstrated that fasting serum glucose, insulin and triglyceride levels and the prevalence of impaired glucose tolerance and systolic hypertension increase significantly as children become obese (BMI of 95th percentile). Even children and adolescents who are overweight (BMI of 85th to 94th percentile) are at risk for comorbidities.[15]

Overweight children and adolescents may experience deleterious psychosocial sequelae including depression, teasing, social isolation and discrimination, diminished self esteem, behavioral problems, dissatisfaction with body image and reduced quality of life.[16] Obese children and adolescents also have increased risk of psychopathology in late adolescence and adulthood.[17]

Depression: It may be a cause or a result of Obesity. Prospective studies have revealed that obese adolescents are at risk for major anxiety and depressive disorders later in life.[18] However, the relationship between depression and eating behavior is bidirectional, making it difficult to discern clearly the causal relationship between obesity and depression, particularly in adolescents. Depressed adolescents are at an increased risk for the development and persistence of obesity. Depressive symptoms are associated with a higher BMI, intake of high-calorie foods, and sedentary behaviors.[19]

Body Image: Dissatisfaction with body image relates to the discrepancy between an individual's perceived self-image and the internalization of a received–and idealized–body image. This dissatisfaction can influence mood and eating practices.[16]

Self Esteem: Obese children have lower self-esteem and higher body dissatisfaction than normal weight peers,[20] along with persistent unhealthy behaviors further lowering self-confidence, deepening frustration and reducing motivations to change.[16]

They are also vulnerable to weight related teasing and social isolation and tend to be ranked lower as potential friends by their peers. Puhl and Latner completed a comprehensive literature review on childhood weight-based stigmatization and found that children demonstrate weight bias by associating obesity with a number of undesirable traits and preferring to associate with non obese peers. Children with more negative attitudes towards weight more likely rate an obese peer negatively and tease and bully children who appear overweight, with few cultural differences.[9] Therefore, interventions using dietary modifications, increased physical activity and behavioral therapy may be beneficial for overweight children and adolescents with more aggressive intervention directed toward obese children and adolescents.

Treatment

Essential treatment of obesity includes low calorie, low fat diets, increased physical activity and strategies contributing to the modification of lifestyle. Anti obesity drugs facilitate weight loss and contribute to further amelioration of obesity related health risks. Bariatric surgery is an effective strategy that can lead to a substantial improvement of comorbidities as well as to a reduction in overall mortality by 25–50% during the longterm follow-up.[21]

The most closely studied comprehensive interventions include behavioral therapy along with changes in nutrition and physical activity as they seem to be the most successful approaches for improving long term weight and health status.[22,23] Treatment should include promoting the psychosocial and physical wellbeing of obese children and ensure that they are not being ill treated.

Treatment should be individually tailored considering the gender, degree of obesity, individual health risks, psycho-behavioral and metabolic characteristics, and the outcome of previous weight loss attempts. The emphasis should be on intensity, enjoyment and safety, not competition nor the enhancement of skills, therefore, activities selected should be based on ease of comprehension, fun and ability to elicit a heart rate greater than 150 bpm.

Examples of these activities include running games, jump rope, basketball, soccer etc.

Petty et. al. concluded that engaging in regular, vigorous aerobic exercise with peers in an organized setting decreased depressive symptoms in dose response fashion among overweight children.[24] Kelley examined the effects of exercise (aerobic, strength training or both) on BMI z-score in overweight and obese children and adolescents and found statistically significant reductions in BMI z-score for aerobic exercise and combined aerobic and strength exercise, but not strength training alone. Combined aerobic and strength training was ranked best, followed by aerobic exercise and then strength training.[25]

Objectives of Physical Therapy treatment

- Decreasing body weight to ideal body weight
- Toning the body, especially the abdominal muscles
- Increasing strength and endurance
- Improving lung capacity and ventilation
- Improving physical and mental wellbeing
- Preventing the activation of other diseases caused by obesity

Guiding Principles

The following five guiding principles are important for the treatment of overweight:[26]

1. Establish individual treatment goals and approaches based on the child's age, degree of overweight and presence of comorbidities.
2. Involve the family or major caregivers in the treatment.
3. Provide assessment and monitoring frequently.
4. Consider behavioral, psychological and social correlates of weight gain in the treatment plan.
5. Provide recommendations for dietary changes and increases in physical activity that can be implemented within the family environment and that foster optimal health, growth, and development.

Exercise Prescription

Recommended activities must be enjoyable and congruent with the child's and family's lifestyle and be rewarding. Activities such as playing hopscotch, riding bicycles, skating, walking the dog, participating in marching band, jumping rope with friends, dancing, climbing, weight lifting structured to improve endurance, training and gardening may be more easily integrated into a child or teen's lifestyle than would be simply recommending participation on organized sports teams. A complementary approach is to restrict sedentary free time activities to less than 2 hours/day.[27] Exercises can include aerobic exercises activities like stepping, cycling, rowing, dance mat,walking, jogging etc., strength training and resistance exercises can be done using weight cuffs, dumbbells, Thera bands etc., ROM exercises and flexibility training which helps in maintaining the muscle length, stretching exercises and relaxation exercises but emphasis should be laid on congruency with lifestyle so that physical activity should not become a burden on the child.

Yan Ping suggest that 20 min of daily moderate to vigorous physical activity during the school year is a feasible and effective way to prevent excessive gain of body weight, BMI, and body fatness in primary school students.[28] Martínez Vizcaíno et al assessed the impact of a physical activity program on obesity in primary school children. It consisted of three 90-min sessions per week for 24 weeks. Each 90-min session included 15 min of stretching, 60 min of aerobic resistance and 15 min of muscular strength/resistance exercises. On average, these exercises required physical activity of moderate intensity throughout the 90 min of each session. The results found recreational physical activity reduced adiposity, increased apo A-I and decreased apo B in primary school children.[29]

Strategies to increase physical activity should include increases in structured and nonstructured physical activity and reductions in the amount of time spent in sedentary activities. Schools have a unique combination of factors, including facilities, fitness instructors and contact with large numbers of young people for many hours each day during much of the year that make them a good environment in which to study physical activity interventions for weight management and to implement proven approaches.[30]

Group exercise training with peers could lead to enhanced motivation to exercise. Cooperation

with parents or legal guardians of children and adolescents is very important; physical therapists should explain why exercise training is beneficial for children, and parents or legal guardians should be supportive of their children and should realize that they are key role models for their children.[31]

Weight Management and Treatment Goals Based on BMI Percentile and Health Status[26]

1. For children with BMI >85th percentile, there are 3 potential goals for weight management depending on age and the level of BMI:
   - slowed rate of weight gain to achieve BMI maintenance
   - weight maintenance to improve BMI with increasing height, and/or
   - gradual weight loss at a rate of 1 to 2 kg/mo to improve BMI.

Very young children (2 to 4 years old) who are overweight will achieve reductions in BMI percentile by achieving a rate of weight gain <1 kg/2 cm of linear growth.

2. Older children (≥4 years old) who are at risk for overweight (BMI 85th to 95th percentile) or who are overweight (BMI ≥95th percentile) without comorbidities may achieve BMI percentile reductions to <85th percentile with BMI maintenance or more rapidly with weight maintenance during linear growth.
3. Children classified as overweight (BMI ≥95% percentile) with comorbidities require an individualized approach based on the severity of comorbidities and a consideration of the importance of weight loss in conjunction with other treatment modalities. When weight loss is necessary, slow weight loss is recommended for several reasons: (a) The goal is achievable and with success, provides positive feedback for children who often have low self-esteem, (b) slow weight loss requires a substantial decrease in calorie intake for children who are still growing and who often have been gaining 20 to 40 lb/y and (c) the diet adapted to meet a gradual weight loss goal is more easily sustained over a long period.
4. Older adolescents who have completed linear growth and have a BMI ≥30 kg/m^2 require more aggressive weight loss similar to that for adults to reduce their long-term risk. Occasionally, physically fit children have increased BMI secondary to increased lean body mass as opposed to fat mass; these children do not need to reduce BMI percentile to the same target goal as children with greater fat mass.

School based, Multicomponent Physical Activity Intervention

Susi et al assessed the effectiveness of a school based physical activity program during one school year on physical and psychological health in young schoolchildren. In this study, children in the intervention group received a multi-component physical activity program that included structuring the three existing physical education lessons each week and adding two additional lessons a week, daily short activity breaks, and physical activity homework. Children and parents in the control group were not informed of an intervention group. The results conclude that the program improved physical activity and fitness and reduced adiposity in children.[32]

Psychological Treatment

For successful long term treatment of obesity, according to Castelnuovo et al, psychosocial and psychopathological variables are important elements to consider due to the relevant correlations between obesity and psychological factors such as self esteem, quality of life, stressful life events, eating disorders, mood problems, anxiety and personality traits.[2]

Nutrition and physical activity levels being critical in addressing the problem of overweight are not the only part of the solution. Clinicians must also identify and help families to address the psychosocial factors which contribute to obesity.Affected children who also experience bullying, depression, low self-esteem or weight bias will have more difficulty managing their weight.Clinicians must consider psychosocial factors when working with families to ensure that treatment goals are realistic and appropriate.[16]

Parental involvement: For successful

outcomes in pediatric obesity, parental involvement becomes vital. In the initial interview, degree of parental readiness to change should be gauged. This readiness to change may be classified as precontemplation (no intention to change), contemplation (considering to make the change, but not yet committed), preparation (intention to change), action (modifying behavior), and maintenance (maintaining the behavior change). Only the children of parents willing to change should be enrolled into program.[33]

Behavioral Therapy: Cooper and Fairburn emphasize that long term adherence to behavioral lifestyle changes should be addressed by a new cognitive behavioral approach to the treatment of obesity that is based in a cognitive conceptualization of weight control.[34]

The two main assumptions[35] for management of obesity are:

- Obese individuals have maladapted eating and exercise patterns and
- These maladaptive behaviors can be modified with specific interventions leading to weight loss.

With these assumptions, principles of classical and operant conditionings are applied to train the children to learn new behaviors that reduce calorie intake or increase physical activity. The following components are used in the common behavioral packages for weight control.

- Self-monitoring in form of maintaining food diaries and activity logs
- Stimulus control by altering the environment that activates eating and modifying it to help in avoiding overeating.
- Slowing the speed of eating to let signals for fullness to come into play by concentrating on tastes, pausing in between meals and drinking water in between meals.
- Setting realistic goals in terms of weight loss per week/ month.
- Behavioral contracting by rewarding the successful outcomes.
- Nutritional education
- Increasing physical activity
- Social support: Enhancing social support by including family members is one of the best ways.

Cognitive Behavioral therapy: There are many parallels between obesity and addictive behavior. Because of common neurobiological pathways in the brain, addiction and obesity have shared certain methods of research and treatment. Motivational enhancement and cognitive-behavior therapeutic strategies used in addiction treatments are equally useful in the treatment of pediatric obesity.[36] CBT weight management programs include multiple behavioral and cognitive components, focusing on increasing levels of physical activity and reducing daily caloric intake. At times, CBT programs may benefit from including parents in the therapy, providing parents with skill training and enhancing a child and their family's readiness to make lifestyle changes. Cognitive-behavioral therapy combined with family based intervention proves most effective, especially for children who are morbidly obese and have life threatening medical conditions.[37]

Motivational Interviewing (MI): It is defined as a person centered, goal oriented method of communicating that elicits and strengthens intrinsic motivation for positive change. MI is especially useful for individuals who are less confident about their ability to change existing behaviors. Combining supportive and empathetic counselling with more directive methods, clinicians can help these patients move from ambivalence to commitment to adoption of healthier active lifestyles.[38] By using MI, they can encourage parents to be more sensitive and nonjudgmental. The focus should be on helping an entire family become healthier. Once a parent is engaged, they should be invited to become positive role models for the family and be encouraged to limit less appropriate food choices and sedentary activities. Parental eating choices, such as limiting high fat/sugar foods and providing healthy snacks in the home, can be hugely influential.

Conclusion

Combined effect of Physical therapy and Psychological therapy can bring drastic changes in Obesity in children and adolescents. Exercise, a nonpharmacologic intervention can play a pivotal role in the treatment of obese children and adolescents. Psychological treatment including behavioral therapy and CBT along with counselling children and their families to accumulate the recommended level of daily physical activity and to restrict sedentary

behavior can also contribute to get the desired results.

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Psychophysiotherapy

Psychophysical Aspects of Cardiac Rehabilitation

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Introduction

Cardiac disease is a leading cause of morbidity and mortality in the adult population in India[1] and accounts for one-third of deaths globally.[2] It is well documented that traditional risk factors like cigarette smoking, hyperlipidemia, diabetes, hypertension do not fully account for the timing and occurrence of Coronary Heart Disease (CHD) events and it is widely recognized that stress and negative emotions play important role indevelopment and course of CHD.[3-5] It has been observed that there is high prevalence of co morbidity between mental and physical illness[6,7] and both depression and anxiety are associated with worse clinical outcomes for cardiac patients.[8] Elevated levels of depression, hostility and anxiety (i.e. psychosocial stress) strongly predicted higher 3-year mortality after major CHD events, with nearly all of the excess mortality confined to patients with high psychosocial stress who did not significantly improve their level of cardiorespiratory fitness. Psychological risk factors such as hostility and anger predisposes individuals to the occurrence of myocardial ischemia[10] and anger has been shown to be a trigger for acute myocardial infarction (MI).[11,12] Even stronger evidence exists that clinical depression is associated with increased risk for fatal and non-fatal CHD events among both healthy persons and cardiac patients.[13] Studies have shown that acute stress from major catastrophic events[14,15] as well as stress at work,[16] chronic anxiety and panic attacks[17] can also trigger CHD events.

Pathophysiology

According to several current reviews, depression and anxiety directly influences health related behaviours[3] as well as affects myocardial perfusion, autonomic nervous system regulation, platelet activation, hypothalamo-pituitary-adrenal axis activity, and inflammatory processes [18,19] thereby promoting the development of cardiovascular diseases through multiple pathophysiological pathways.

Acute stress increases systolic anddiastolic blood pressure and myocardial oxygen consumption and decreases relative coronary perfusion, thereby promoting myocardial ischemia.[20] Hyperventilation due to acute anxiety/ panic attacks, can promote coronary artery spasm which can trigger fatal cardiac events bothin patients with Coronary Artery Disease (CAD) and in apparently healthy individuals.[21] Severe depression, anxiety and hostility may lead to heart rate variability due to decreased parasympathetic activity or increased sympathetic activity[19,21] leading to occurrence of ventricular arrhythmias or sudden death inpatients with both CAD and anxiety or depression.[22] Elevation of plasma norepinephrine in patients suffering from major depression directly affects myocardial excitatory activity[22] which promotes cardiac rhythm disorders, activate platelet aggregation, and modify vessel permeability, thereby increasing the risk of ischemic and arrhythmic cardiac events.[18] Also increase in the circulating catecholamine levels in patients with depression triggers aggregation of platelets which contributes to the development of thrombi, vessel wall damage, and arteriosclerosis.[23-25] Furthermore, serotonin released by platelets facilitates platelet aggregation and coronary vasoconstriction,[25] thus potentially inducing thrombotic and ischemic events.

Now a day, the rates of morbidity and mortality from cardiac disease have been steadily declining owing to more aggressive management and public health awareness. There is a growing consensus that exercise has a beneficial effect on patients with cardiovascular disease, even for those with severely impaired cardiac function because physical inactivity accelerates the severity of heart failure. Cardiac Rehabilitation has been shown to reduce depressive symptoms and physical activity/exercise is recommended by the American Heart Association as helpful treatment for cardiac patients with depression.[26-31] International clinical guidelines consistently identify exercise therapy as a central element of cardiac rehabilitation[32,33] i.e. 'exercise-based cardiac rehabilitation'. Numerous epidemiological studies have shown that exercise improves one's self-esteem, and a sense of wellbeing. Individuals who exercise regularly exhibit slower rates of age-related memory and cognitive decline in comparison which alleviates depression and anxiety in cardiac patients. Studies have also shown that depressed patients with CHD who attended a formal cardiac rehabilitation program, had nearly a 70% reduction in mortality risk. It has been found that only small improvements in exercise capacity may produce profound improvements in depression and depression-related mortality.[30-32]

Cardiac Rehabilitation

Cardiac rehabilitation has been defined as the coordinated intervention designed to optimize cardiac patient's physical, psychological and social functioning in addition to slowing or even reversing the progre-ssion of underlying atherosclerotic process, thereby reducing morbidity and mortality among patients with coronary heart disease.[31] The basic goals of cardiac rehabilitation are to restore and improve individual symptoms, functional capacity, and metabolic status thereby improving cardiac functions and reducing disability, identify and improve cardiac risk factors, and increase cardiac conditioning. It alsohelps in the reduction of depression, anxiety[33,34] and enhance-ment of quality of life in patients with coronary heart disease.[35,36] It ensures that cardiac patients achieve optimal physical, mental, and social conditions, so that they can resume and maintain as normal a place as possible in the community by their own efforts and helps in recovering from cardiac events and reducing risk of future cardio vascular events.[33] A comprehensive cardiac rehabilitation program is developed by a team of multidisciplinary experts and includes patient assessment, exercise training, management of biological, psychosocial, and metabolic cardiac risk factors, patient education through physical activity and nutritional counseling and psychosocial management via behavior modification and lifestyle changes.[33]

Each of the different types of cardiac disease lend themselves to a different form of rehabilitation, and the benefits of cardiac conditioning and improved survival are well-documented by numerous studies. Benefits include offsetting deleterious effects of bed rest during hospitalization, enabling patients to return to ADLs within the limits imposed by their disease, prepare patient and support system at home to optimize recovery after hospital discharge, reducing cardiovascular and total mortality, improving myocardial perfusion, reducing progression of atherosclerosis, improving exercise tolerance without significant cardiovascular complications, improving skeletal muscle strength and endurance in clinically stable patients. Outcomes in cardiac rehabilitation include smoking cessation, lipid management, weight control, blood pressure control, improved exercise tolerance symptom control, return to work and psychological well-being/stress management. A Cochrane review concluded that cardiac rehabilitation including only exercises reduced all-cause mortality by 27% and cardiac mortality by 31%.[37] A study by Witt et al in 2004 found that not only participation in cardiac rehabilitation associated with decreased mortality after MI but also with lower risk of recurrent Myocardial Infarction.[38]

Phases of Cardiac Rehabilitation

A Cardiac Rehabilitation program is organised into four phases.[31]

Acute Phase (Phase I) relates to the period of hospitalization following an acute cardiac event. Duration is usually 1-week post event varies depending on the initial diagnosis & severity of the event. Main objectives of phase I include conditioning from acute event, early mobilization, secondary prevention targeting, risk factor assessment and risk stratification. Intervention include bed mobility

exercises, breathing exercises, chest clearance techniques, active range of motion exercises of upper limb & lower limb, and short distance ambulation. In addition, in phase 1, information is provided on cardiovascular disease, associated risk factors, and treatment modalities, including medications, as well as lifestyle and home-care advice. ***Convalescent Phase (Phase II)*** relates to post discharge period (2-6 weeks) and interventions include supervised ambulatory outpatient program aimed at regaining functional ability and focuses on health education and resumption of physical activity. Activities in phase 2 include daily walking, home exercises with personalized goals for patients based on age and physical conditioning, symptom discussions and counselling for patients and caregivers e.g., in life coaching and enhancing their coping mechanisms erroneously referred to as '***Exercise Phase' (Phase III)*** and begins 6-8 weeks post event and lasts up to 3 months. It comprises of safe, incremental progression of physical activity, risk factor modification and health education. Consist of structured individually tailored exercise training with continual educational and psychological support and advice on risk factors. Its frequency is 3-5 sessions / week with duration of 15- 60 min. Exercise class consists of set of various Aerobic Exercises (warm up, exercise class, cool down) and Resistance training with active recovery stations where appropriate. It is well documented that CAD patients who spends 250 – 300 kcal per session and 1000-1500 kcal per week in additional physical activity will improve their aerobic capacity by 15 – 30 % over a 4-6-month period.[33] Evidence supports 1600 kcal expenditure/ week may halt the progression of CAD with atherosclerotic regression at about 2200 kcal / week[32] ***Maintenance Phase (Phase IV)*** constitutes the components of long-term maintenance of lifestyle changes professional monitoring of clinical status. It is when patients leave the structured Phase 3 program and continue exercise and other lifestyle modifications indefinitely.

Cardiac Rehabilitation Exercise Program

Exercise sessions consists of *Aerobic Exercises* (warm up, exercise class, cool down) and *Resistance training* with active recovery stations where appropriate to gain a beneficial effect, exercise are aimed to a level where patient is slightly warm, slightly sweaty and slightly out of breath. If patient become unduly breathless i.e. unable to talk in complete sentences due to breathlessness or if patient feel dizzy, sick or experience chest pain exercises are slowed down, stopped and patient is made to rest. Exercises should not be performed if patient is feeling unwell, unduly tired or have just eaten a heavy meal in the past 1-2 hours.

Warm up exercises consist of Pulse Raising Activities like Walking, marching on the spot, Range of Motion and Stretching exercises for major group of muscles. **Exercise training** can be divided into Continuous Training, Interval Training and Resistance Training. In Continuous Training uninterrupted activity is performed at constant sub maximal intensity for prolonged duration. e.g. walking / jogging/ cycling / rowing / treadmill exercises etc. In Interval Training or Circuit Training, Bouts of relatively intense work are separated by bouts of rest or relatively less intense work, lower intensity - active recovery stations are usually designed to increase endurance. In Resistance Training, resisted exercises are performed for major muscle groups of body and it begins 2-3 weeks post aerobic training. It increases the diastolic blood pressure thereby increasing myocardial perfusion. A thorough *Cool Down* for 10 minutes reduces the risk of fainting or dizziness that could result from sudden drop in blood pressure. It aims at bringing the body back to its resting stage gradually and reduces the risk of disturbances that could happen after stopping exercises suddenly. Stretching during cool down helps to reduce muscle soreness that may be caused by activity. Cardiac rehabilitation/ secondary prevention programs are recognized as integral to the comprehensive care of patients with Coronary Heart Disease and as such are recommended as useful and effective by the American Heart Association and the American College of Cardiology in the treatment of patients with Coronary Heart Disease.[33]

Numerous epidemiological studies have shown that exercise improves one's self-esteem, and a sense of wellbeing. Individuals who exercise regularly exhibit slower rates of age-related memory and cognitive decline in comparison to those who are more sedentary. Adults who engage in regular physical activity experience fewer depressive and

anxiety symptoms. Both physiological and psychological mechanisms explain the facts how Exercises offers protective effect against the development of mental disorders.

Physiological Mechanisms: Broadly, regular exercises result in physiological changes and adaptations in the human body. Studies have shown that regular aerobic exercise is associated with lower sympathetic nervous system and hypothalamic-pituitary-adrenal (HPA) axis reactivity. Dysregulations in the[39] HPA axis leads to depressive and anxiety symptoms[40] leading to alterations in adrenocorticotropic hormone (ACTH) and excess levels of glucocorticoids. Studies have suggested that voluntary exercise alters the releases of corticotrophin-releasing factor (CRF) from the hypothalamus and ACTH from the anterior pituitary[41] and hence modulates stress reactivity and anxiety in humans.

Studies have provided evidence that regular aerobic exercise increases serotonergic and noradrenergic levels in the brain, similar to the effects of antidepressants[42] Increases in serotonins synthesis, metabolism, and release have been noted following exercise[43] Treadmill exercise training also increases levels of preprogalanin mRNA, suggesting that gene expression for galanin is sensitive to the stress from exercise training and may have a "neuromodulating role" in the noradrenergic response[44] Another possible mechanism for the anxiolytic effects of exercise is via mediation by the endogenous opioid system. The endorphin hypothesis posits that the mood elevations and reduced anxiety following acute exercise is due to the release and binding of endogenous opioids to their receptor sites in the brain. Studies demonstrate that exercise increases endogenous opioid activity in the central and peripheral nervous system and may induce a euphoric state and reduce pain.[45] Further, Stress-induced depressive and anxious behaviors are correlated with decreased *Neurotropic Factors* i.e. Brain-derived neurotrophic factor (BDNF) levels especially in the hippocampus. Increases in BDNF following physical activity has beenobserved which acts as an anti-depressing agent.[46] Exercise is also believed to positively influence surrogate measures of adult hippocampal neurogenesis such as β-endorphins, vascular endothelial growth factor, BDNF, and serotonin, all of which are thought be common patho-physiologic mechanisms for anxiety disorders.

Psychological Mechanisms: A number of research studies have pointed to the effectiveness of short-term aerobic exercise to reduce anxiety sensitivity as physical exercise increases their tolerance for such symptoms[47] Repeated exposures through regular aerobic exercise also facilitates habituation to the feared sensations[48] It has been debated that exercise can increase **self-efficacy** by supplying experiences of successfully coping with the stress of exercising. As fitness improves, the individual receives feedback of greater endurance, less pain, greater duration capabilities, etc. As a result, self-efficacy should increase.[49] Therefore; it is proved that physical exercise can be efficacious in reducing the risk of such diseases as well as in promoting psychological health by an increase of daily physical activity and improvements in cardiorespiratory function.[48]

Conclusion

Reductions in morbidity and mortality with Cardiac Rehabilitation can be equivalent and more cost effective than many of the best available pharmacologic and invasive interventions. Cardiac rehabilitation has also been proved to be beneficial in terms of bringing patients back to their normal functional status. Hence, there is a need for greater referrals, wider publicity and education for both patients and clinical staff on benefits of cardiac rehabilitation especially in cardiac patients with both psychological and physical problems.

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Commentary

Drug Addiction among Kashmiri Youth and Prevention Thereof

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Introduction

The indirect effects of an armed conflict are as debilitating as the direct consequences. Substance abuse is one of the withering consequences one can witness among youth struggling with prolonged socio-political unrest. The youth in Kashmir are not spared of this deadly menace. According to a report published by United Nations Office on Drugs and Crime, around 70 thousand people are drug addicts alone in the Kashmir division, among them, approximately 31% are women.[1] One similar study carried out by Government Psychiatric Disease Hospital Srinagar, reveals that around 90% drug abusers belong to the age group of 17-35. The alarming increase in the number of youth turning to drugs are the ones who have directly or indirectly got affected by the ongoing turmoil. The seemingly unending suffering in the form of strikes and bandhs, communal riots, exposure to violent events like stone pelting (by youth) and thrashing (by armed forces), witnessing explosions and the resultant chaos to name a few, leave one and every person in a state of confusion.

In addition to this, unemployment is seen as one of the major contributing factors behind this epidemic as after resorting to a drug, the person experiences a euphoric state, though momentarily, followed by a complete withdrawal which allows him/her to take off his/her mind from the feelings of hopelessness and helplessness. Other factors include breakups in love affair, non-cordial relationship with parents, peer pressure etc. Study conducted by Amin[2] found that majority (29%) of the drug abusers are among the student community belonging to the age group of 15 to 25 years, attributing their addictive behavior to curiosity, peer pressure and poor decision making.

According to the Director Drug De-addiction Center, Police Control Room, Srinagar, Dr. Muzafer Khan, medicinal opioids in the form of spasmo-proxyvon capsules (containing dicyclomine, paracetamol, and tramadol), codeine phosphate syrups and benzodiazepine tablets are predominantly abused. Others include cannabis (marijuana), brown sugar, alcohol and solvents ranging from inhalants like correction pen, fevicol, SR solution, thinner, shoe polish, paint varnish to dirty socks. "The menace of drug addiction has penetrated every section of our society and a much younger age group is seen falling prey to this epidemic than previously observed. Moreover, a very disturbing trend is seen for the last one year wherein more and more youth are turning to Heroin, making it more complicated and challenging when it comes to treatment adherence", he cautions.

Among the substance being abused, cannabis has been found to have more deadly effects on its users. Cannabis abusers become more vulnerable to both physical and mental disorders. Study conducted by Wani and Singh found higher levels of anxiety, depression, loss of behavioral/emotional control, psychological distress, lower level of emotional ties, life satisfaction and general positive affect among cannabis abusers.[3] More symptoms include respiratory problems, physical weakness, optical problems, followed by kidney and liver ailments.[2]

The deadly effects of drug abuse is not limited to physical and mental derangement only, but it significantly affects a person's behaviour and conduct as well. The person into it fails to

understand, comprehend and realize when it comes to interact and communicate with other fellow beings, which often contains an abusive content. Moreover, a close association between drug use and crime has been found by researchers in various studies. Amin in his study also found that a majority (79%) of the drug abusers to have an involvement in various criminal acts ranging from theft, pick-pocketing, drug trade to stealing house hold items.[2]

Prevention upon Cure

It goes without saying that "prevention is better than cure. Although there are various treatment modalities available to the patients in order to rehabilitate them and bring them back to the main stream. In this regard, drug de-addiction center, Govt. Medical College, Srinagar and Drug De-addiction Center, Police Control Room, Srinagar run by J & K police department, have been doing a commendable job in treating and rehabilitating the youth. However, the picture is so griming that very recently more de-addiction centers were opened in several other districts of the valley. Undoubtedly, the patients are being treated and cured at these centers by noted experts, need of the hour is to develop the understanding among various stakeholders and bring awareness about the risk as well as protective factors among youngsters. In this regard, some preventive measures can be taken to overcome this social, emotional and moral disorder.

Parenting Matters-Make it Authoritative

Family being the first institution of the child, parents must ensure that they are in close connection with their kids so that their children don't feel neglected and isolated. They need to employ authoritative parenting styles and make themselves available for a patient listening of the issues of their children so that children will have an open expression of problems/concerns before their parents. Moreover, parents being the role models for their children they must exhibit healthy ways of coping in order to help their children grow resilient. Study conducted by Blair[4] also reveals that less positive parenting style goes hand in hand with poorer executive functions in children leading to several kinds of mal-adjustment. Moreover, parents need to be vigilant enough towards the behavior of their children and aberrations, if any, need to be addressed as early as possible before the situation goes out of control. Here one realizes the importance of joint family system where children are attended by other members of the family, particularly by grandparents, in absence of their parents which makes them less vulnerable falling prey to such evils.

Educational Institutions-Where we spend half of our lives

The importance of education is known to one and all. It is the education which helps a person to figure out the difference between right and wrong and what benefits him/her and what not. Therefore, educational institutions have a very important role to play in order to bring awareness among students regarding the deadly effects of drug abuse. What is more needed in today's demanding world is to help students enhance positive virtues and safeguard themselves from developing any maladjustment which may lead to drug abuse as well. Therefore, educational institutions must include the courses (such as Mental Health, Personality Development etc) in the curriculum which can help its population to enhance its psychological capital/life skills such as Adjustment, Coping, Resilience, Assertive behavior, Emotional Intelligence etc. At the same time risk factors like personality type (introversion, low frustration tolerance) and psychological frame (perceptual flaws, irrational thinking and belief system) should also be highlighted and addressed at the very early stage. It is the primary responsibility of all educational institutions to incorporate courses related to mental health which in turn help students develop positive attitude towards life so that they can deal with any adversity without losing their mental equilibrium and contribute to the well fare of the society like well-organized and composed beings do. Educational Institutions must ensure that there is a counselling psychologist in every institution in order to address and cater the psychological needs of its young population. Undoubtedly, life without education is a body without soul, similarly, education without wellness (physical and mental) lacks its sheen and makes an individual feel more worthless and misfit than being not educated. Its of no use that how many graduates we produce every year, we need to ensure that our youth must realize their potential, display socially considerate behavior, adjust with themselves/others and safeguard themselves

from developing a clinical diagnosis like depression or drug addiction. To achieve this goal, awareness programs must be conducted at regular intervals in collaboration with various government and non-government organizations working in the area of mental health and well-being in order to sensitize youth about the deadly effects of drug abuse.

Religious Institutions-Towards Moral enrichment

Human existence is comprised of three basic elements, viz; body, mind and soul and all these three elements are closely connected with each other. If a person's soul is not in alignment with the other two aspects i.e. body and mind, the body becomes restless and mind loses its peace. Kashmir being a Muslim majority state, the burden of performing an undesirable act like turning to drugs (which is prohibited in Islam) and losing one's mental balance, often manifested in behavioral aberrations ranging from verbal abuse, talking slang, agitated behavior to highly intensified sins like physical and sexual abuse turns out to be a potential reason for a person to develop a mental disorder, a resultant of moral degradation. Therefore, it is equally important to attend and address our spiritual needs the way we attend our bodily cues and cater to its demands. To achieve that goal, religious leaders/clerics can play a pivotal role. They in their sermons need to highlight the dire consequences of drug abuse upon the moral character of a person, which in many cases leads to social exclusion.

Finally, the Government agencies have also a bigger role to play in curbing this menace. These need to ensure the seizure of the illegal trafficking and sale of drugs. Police personnel need to be extra vigilant to restrict the movement of drug mafia and save youth from consuming these noxious substances. Therefore, it a collective responsibility of all the stakeholders of the society to ponder upon and take serious measures to safeguard the already fate bitten residents of Kashmir. "We have lost one generation to war and now we are losing one to drugs".

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Commentary

Single Parenthood Families and their impact on children in India

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Introduction

Parenting is as old as the creation of the universe continues to pass generations and there is no dearth of knowledge books theories that could make it easier to explain what parenting is all about. Parenting is unconditional love and support which is present among all living beings on earth depends upon how strongly you need it. India is one of the best lands of nurturing their children and analyzes their weakness to develop strength, havinga proper plan to bring their children into a high level of achievementusually male children from high independence to high responsibility die hard due to the cultural obligations and parental expectations to take care of them in elder age. Parenting denotes the biological relationship of father and mother to a child that emerges with the fundamental concern of the Indian society.

Single parenting is a social sacrifice and unpleasant test of stamina in one's life for bringing up the child, reacting more when greater than the average working hours lacks the importance of emotional strength of the child to deal with often ends up with a little neglect. In the present world single parenting is often judged for every aspect of living around by the adjacent families and different sort of parents has different sets of concerns and problems with their children. Single parent families have always been existed but willingly choose to bring up a child is common among young married couples and it is hard to defineonce the child becomes the victim of it adversely affect the mental and emotional being of the child. Raising a child independently without any support of the partner is a big challenge for both the parents because bring changes in the inner world with the outer environment needs support from both the parents.A child living life with single parenting loses their child hood and decency due to the parental,workforce, commitment and social isolation. It was often seen that mothers are close to their children to lean more towards motherside because of their protective, nurturing characteristics, from a long established mother child relationship continuing as the child grows up as compared to father where the role is always dominant.[1]

There are 320 billion children worldwide between 0-17 years of age living with single parents mostly headed by single mothers and near about 2.3 billion children are living in India where rising sociocultural issue is the ultimate cause of single parenting after the death of the parents.India is not lagging it behind that they are not considering participating, competing, and cultivating the culture of single parenting more markedly. The world of modernism and materialism has revolutionized the outlook of Indian culture through different cognitive contents that western countries have experienced from a very long period due to many concerns and connections. In Indian culture death was the only possible reason for single parenting, now other personal issues show active participation. Most of the single parent families in India are mother headed because it is not common for a mother to abandon her family.Traditionally father is the primary financial supporter of the Indian family, his absence reflects a bad impression to the development of forming values in children in family because father is perceived to be the primary disciplinarian and mothers are usually not adequately prepared the disciplinarian role in absence of father results in elevated risk of experiencing cognitive, social, and

emotional problems. Most of the mothers in the culture of India are house wives due to low education and in many cases mother as a primary parent found it difficult to handle the child hardly enough to provide the basic needs of the family.

Reasons for Single Parenting in India

Single parenthood could be of various reasons the reason may be the death of a partner, separation, divorce, dowry and extra marital affairs. The death of a parent is a natural cause of single parenting where the affect is unfortunate. This is beyond one's control to get involved in a natural disaster. However the other sociocultural issues like divorce, dowry, and separation are the consequences that can be controlled in the form of physical and psychological techniques and even in many situations the control is limited but the ultimate cause affects the family and society as a whole.

(1) ***Divorce:*** the idea of divorce was ignorant in the culture of India. Death and disease was the only reason for separation among all the married couples followed by different religions, customs and traditions.The rate of divorce is now highly increased in Indian societies which left its bad impression among women in terms of competition and late working hours consequently leads women to lack the importance and responsibilities and to deal with the existed relationship.

(2) ***Marriage against the Wish:*** Sometimes parents of Indian children forcefully want to marry their children against their own wishes and choices which often results in single parenting. This is called marriage by force. People who are not satisfied with their marriage life are getting involved in intimate partner violence with no level of understandings.

(3) ***Extramarital Affairs:*** The relationship that develops outside marriage where an illegal passionate attachment occurs. The family members and well-wishers would certainly not expect the wife cheating on her husband and having an extramarital affair. Its emergenceis one of the leading causes among most of the married couples where the relationship was found between young males and older females and vice versa. The reason could be that women like the flexibility and sense of adventure of their more spontaneous, younger companions; while the younger men like the maturity and experience of the women.

(4) ***Death of a Life Partner:*** death is one of the most accepted crucial stressful life events for single parenting. The survivors not only survive and adjust the lost close relationships but try to manage the responsibilities and liabilities which once were shared by both of the portents.

Family Environment

The world's most accepted part of the Child's environment is family when we talk about the family this means that we are taking about the group of individuals usually father and mother and their children living together throughout the entire life. The family is the most valued system in almost all spheres of life, the only institution which provides security and support without any rewards in return. The family environment includes the behavior created within a family and develops a Child's personality.The effective family functioning in conditioning the children's personality and social development has outstanding importance[2] because families with highly readiness to commit to environmental change positively affect the family system.[3] The interaction and interpersonal relations within the family system between parents, parents and Childs, their siblings living in the household have a better chance of cognitive development. The facilities are available in the family system influence the adjustment of children within the family. Children in the family environment identify the members that he/she loves him most and tries to adopt their behavior as well. According to the social learning theory of Albert Bandura child can learn behavior through observation thus within the family system proper care of atmosphere leads to a positive effect on the well-being of the child. Once the behavior has been established it is impossible to eradicate completely but can be modified or changed through various psychological techniques. As Sigmund Freud once defined that childhood is a father of man because its significant reflections have been found to see after late adolescence. Experiences that the individual has in early life in a family in general and parents in particular are the major determinants of his adjustment process during adolescents and in later life.[4,5] Family environment including family relationship and personal development is correlated with adolescent academic development[6] will enhance the performance of children in school.[7]

The structure of Indian culture reflects its own image and impression from its antecedent to next generations where members are defined according to the tradition with respect to age, gender, and relationship status which plays an active role in our behavior. In this culture the role of each member is defined hierarchically. The interactional patterns, interpersonal behavior and communication styles are restrictive and rule bound. Children are taught to renounce their self-interest and pleasure for the family[8] and die hard due to parental expectations to take care of them in elder age. Being dependent at this stage is a concept of compliance for example usually surrendering authority in the hands of parents. Children's are emotionally dependent on parents and there is no dearth of emotional attachment to parents throughout life. Suggestions and views are blindly accepted and are observed as strong ties to continue and continued with emotional dependence in the family particularly when coming from the mother's side. A cultural expectation of close family bonds and less emphasis on autonomy is a part of the socialization process. There is no denying the fact that youths are less inclined to seek autonomy and challenge the authority figures due to socio-cultural forces that reinforce group solidarity.

The youth of now in India are experiencing different changes in their social setup through cultural globalization where the central theme is *Education*. Increasing education leads to different cultural modifications adapted in a wide variety of situations; *Achievement*-enhancing good achievement slowly loses the bond with parents tries to make changes and *Late Marriages*- delay the age at marriage trying to expose the world to develop a carrier. Sons grew up to become less likely to form bonds with their parents making another generation of youths (males) vole relations more likely. Females are trying to experiencing new reflections about their *Gender Identities*, their parents are not interested feeling ashamed due to cultural values and ethics because adopting new behavior is often evident particularly when we transgress basic cultural values pertaining to the gender perspective. The whole scenario presents a double burden phenomenon between the world of children and parent. This growing discrepancy presents a challenge and keeps a stand to their interpersonal relations. However male children experience more conflict encouraged more to expose and to live independently are less likely to accept parental regulations as appropriate.

Impact of Single parenting on Children

Psychological/Emotional Impact

Parents are the primary caregivers of the child to spend most of the time withtheir children[9] able to facilitate psychosocial needs of the children[10] to acquire cognitive development more abstractly and logically[11] which otherwise develops the feelings of abandonment, sadness and difficulty in socialization process mostly depends on the parenting style of the single parent likely to achieve self-socialization later in life.[12]

Impact on Child's Academic Achievement

The double biological parents are more likely to involve in their child'seducation when compared to single parents[13] and improves their performance in education.[14] Single parent families have a negative impact on a child's academic achievement resulting in being a change in their daily routines due to long working hours and less time to spend withto help in homework. The single parents noted that poor academic achievement is due to lack of their proper supervision[15] and attention that is why both the parents have a role to play in child's education.[16] Besides being in economic hardships effects on a child's emotional well-being decreases educational performance and increases risk taking behaviors.

Impact on Childs Behavior

The child experiences the break down in family structure shows poor behavioral outcomes,[17] poor cognitive outcomes[18] and high psychological disorders[19] is more common among boys as compared to girls[20] because many times child of single parents have to take decisions without consulting the parent[21] due to which the parents zero tolerance for negative behavior display un-suitable behavior[22] for them.

Coping strategies

Modern life is full of stress and strain. Stress is a normal reaction and everybody experiences and channelizes it in a different way. Changing in our life even positive or negative can be stressful.

Change in one's expectation, the death of one couple, children do not do well in school leads to feel frustrated and come out with stress. Because parents feel stressed and even learn helplessness if they can no longer have complete control over what happened in their life. Coping is a dynamic situation and specific responses to stressintend to resolve the problem and reduce stress. According to Baum and Singer[23] resources are the adaptive capacities provide immunity against damage from stress viewed as predispositions derived from genetic factors and environmental influences. It is impossible to experience coping strategies without the occurrence of stressor events and is possibleonly after the experience of stress. Different strategies can be tried, tested and then discarded in favor of others. Mainly the use of coping strategies has been viewed as *Personal* involves internal resources such as personality and cognitive traits to shape the coping process. Coping strategies are influenced by a range of dispositional factors for example self-efficacy, resilience, and optimism as internal charactersthat stems from within the individualto change and challenge single parenting. *Environmental* involves the involvement of environmental resources and perceived social support from the social network which has been found absent in Indian culture. In lower class families'children get married at the veryearly stage of maturity and the majority of the cases of single parenting were found among them due to their unplanned pregnancy, poverty, domestic and partner violence. Women sometimes remarry only because of their children to fulfill their basic needs through his new bridegroom because the father is the only primary care giver and bread winner of a child in India. This is somewhat different as compared to western context were a single mother living a good life with her kids, by getting financial assistance from the government which is absolutely absent in our country.

Conclusion

The psychological sequelae of single parenting are well documented as the literature has shown that family issues and dispute between parents causes a negative impact on children psychological wellbeing than any other major disease. The concern of this issue is growing rapidly in our country where mothers are found more concern about the issue. Raising children independently either by father or mother is crucial due to his own adverse effects in terms of sharing various problems. Fathers are often seen as very tough as compared to mothers were children are able to share and get support totheir problem. Single parents are forced to work to support the house hold expenses, life style maintenance and future planning requirement and it is important for every child to be with father and mother to boost his performance and meet the emotional needs of children. For the single parent there is little time for a normal house hold work in addition to earning and living and raising children.[24]In single parenting housekeeping may have the least priority than other activities.[25] Losing or falling off either of the parents creates instability in family structure and there is the emergence of new family structure which may be disorganized due to the conflict between their job and housekeeping duties. The expressions of anger and conflict are often seen in children of dual parenting as compared to children with single parents. This means that children of single parenting families are encouraged to be assertive and self-sufficient to take their own decisions. Participation in social and recreational activities is slightly lower in children of single parenting families because they might be getting socially acceptable and desirable responses. Single parenting children withdraw themselves socially and emotionally to become less expressive in terms of their feelings they donot prefer to see themselves as expressive even in the ideal family environment as compared to a child brought up in dual parent households. It is worthwhile to mention here that a child without a parent is a ship without a rudder. A change in the behavior of the child through both the parents is necessary to chase the right direction for the overall benefit of the child.

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View Point

Is the patient centric Mental Health Care Act indeed patient centric – a clinical perspective

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Introduction

People suffering from mental illness are the most violated and least legally protected groups in the society.[1] In the wake of their protection, acts have been formulated to safeguard them and provide them with a greater impetus of their rights.[1] The act for mental health dates back to the mid-19th century in India. Beginning with the Indian Lunacy Asylum Act in 1858 and Indian Lunacy Act in 1912, the act only provided for custodial care with a complete ignorance to legitimate human rights provision. This was followed by the Mental Health Act in 1987 and it is only now that we have the new Mental Health Care Act.[2]

Progressively, the act was revised keeping in mind the growing needs and beneficiaries of mental health services. The act reads as the Mental Health Care Act 2017, with 16 chapters and 134 amendments, passed by the Rajya Sabha on August 8, 2016. Encompassed in 126 clauses and sections, it is a radical change in the mental health scenario of the nation. It is a less rigorous revision of the Mental Health Care Bill 2013 that cleared Parliamentary Standing Committee without remedying many defects and retaining many counterproductive provisions which deem to have a negative impact on the future delivery of mental health services.[3] The present act also stands to face controversies from the National Mental Health Care department and is upheld for implementation. Where on one hand the act has aided growth[4] in the definitions, rights and provisions for people with mental ailments, on the other hand, it has failed to proportionately do justice to the caregivers and psychiatrists, which largely affects the quality of treatment of the people with mental illnesses.[4] This article is an evaluation of the Mental Health Care Act from the lens of clinical and public health care, maneuvering over the question if the patient-centric Mental Health Care Act is as patient benefitting as it is deemed to be.

Though the Mental Health Care Act attempts to provide for humane laws, better induction of resources and lays emphasis on ethics and respect for human rights of the patients suffering from mental illnesses; there are several critiques about the same that need due consideration as the Act is now implemented. The clinical and public health limitations and concerns of the act are discussed in the sections that follow.

Definitions in the Act that need urgent attention

Some definitions in the act need to be understood from a clinical perspective rather than just an act perspective.

Firstly, the definition of mental illness has received a much appreciated and broader dimension in the present act however; the exclusion of mental retardation / intellectual impairment is a continued challenge to psychiatric care. People suffering from mental retardation often have psychiatric comorbidity and need care for their psychiatric problems and behavioral issues, especially, those with moderate, severe and profound conditions that may need the essential intervention and care of the psychiatric unit. If devoid of it, it shall grossly affect the effectiveness of their recovery and wellbeing. Exclusion of such patients by the act thus excludes patients with mental retardation to obtain adequate care.[5]

Secondly, in addition the definition of mental illness is also claimed to be over inclusive in terms

of failing to discriminate between the minor and major mental illnesses. A repercussion faced by this is that around 195 million people are considered under the mental illness population count[6] and this strengthens the stigmatized view towards mental health and the treatment of mental illness. Meeting international accepted medical standards for case findings and bringing more number of people under the ambit of mental illness is not a beneficial stand for the treatment. Many patients may use the act and their advance directive power to refuse treatment and many patients who would come for care may not due to various stringencies of admission as per the act.[7]

Thirdly, the definition of the nominated representative (section 14) is also questionable in the act, which does not include the criterion of the time of stay for the representative and whether the person must be living with the patient. In India, the duration of stay is crucial with respect to the appointment of a representative for a person who suffers from a mental illness with regard to the amount of time spent providing care to the patient. Another aspect of the representative which the bill fails to mention is the criterion of being well versed about the needs of the patient and the mental illness itself in order to provide sensitive and efficient care. It is crucial to have these considerations in place for appropriate care for the patient. The representative may be anyone and thus the importance of blood relatives and family members have been sidelined. Many caregivers may spring up and take charge of being legal representative of the patient with the aim of just usurping the patient'swealth and property as happens many a times in daily life.[8]

Insufficiency of The Mental Health Review Board

An issue is also raised with the treatment procedure chronicled in the bill. The present bill moves to a more politically correct word 'supported admission' (in place of involuntary admission) and lays the foundation of the creation of a mental health review board (MHRB) that shall moderate the decisions of treatment or no treatment for the patient with mental illness, if and when contacted by the patient. The review board is to consist of 6 people – a District Judge, representative of District Collector or District Magistrate, a Psychiatrist, a Medical Practitioner and 2 Persons with Mental Illness or Caregivers. The functionality of the MHRB can be described as- when contacted by the patient in dilemma, the office of the district mental health review panel takes details and reassures the patient of a team to step in and take the matter with concern. The team, which is actually a judicial body headed by a former district judge is proposed to visit the hospital, conduct a court hearing and decide whether the patient needs to continue staying in the hospital or not. If the decision is in patient's favor, he or she is allowed to go home. The authority or board meeting is accepted to proceed with a requirement of 3 members only.[9]

There are several things not appealing about the Mental Health Review Board such as that it consists of only one psychiatrist who is the only mental health expert, secondly that there is no description about the importance of knowing fundamental information about mental health and mental illness for the district judge, collector or magistrate or the caregiver and whether they shall receive training to judge mental illness and its presence and absence.Also, in the case of the meeting for the Board, there is no necessary mention of the psychiatrist being one of the three members and there is no criterion for the person with mental illness to make responsible contributions in the decision of the board. All of these have dire consequences in the decision making for the approach of treatment for the patient. It is well known that a patient that suffers from schizophrenia may behave perfectly normal before others while the close family bears the brunt of his angst and delusions.[10]

Questionable Competence of Professionals

Another challenge with the treatment prospect that will be faced when the act is implemented, is that, in case of an emergency, a non-mental health professional has an equal decision power to take a call for treatment for a patient suffering from mental health issues. All supported admissions in mental health establishments, even when the patient is admitted even for a day are proposed to undergo a review by the Mental Health Review Commission and an appeal against such a panel's decision shall lie with the district high court. This takes away the right of the professionals of having a right say in the

treatment in the best interest of the patient. The competence and qualification of the board along with the ability of decision making of a mentally ill patient is highly questionable yet unaddressed in the act.[11]

The actmentions about the provisions of admission and discharge of the patients on request. This brings a huge risk for the patient in care, their families and the society, at large. The patient here has the right to seek help of the mental health review board and discharge himself at will via an advance directive if needed. This was unlike the Mental Health Act 1987, where a relative was needed for the same. The board also approves of the police complaints made by the patients in case of involuntarily provided treatment (in the best interest of the client) an action taken on psychiatrists or family members is considered right. What is ignored here is the lack of sensitization of the police professionals about mental illness conditions and a lack of training amongst police in judging mentally ill persons and whether their complaints are valid and legit.[12]

These decisions indirectly consent the patient not seeking treatment at all, leaving treatment in between without the knowledge of benefits of the treatment, alternating treatment for the mere comfort and neglecting the welfare brought by psychiatrist's proposed treatment and also lawsuit being filed against mental health professionals without complete knowledge and understanding of the patient's mental health condition. This hampers the progress and quality of life of an individual who is suffering from a mental illness. The refusal of treatment is a harbinger of burden for the family members, caregivers and the mental health professionals. There is thus going to be in the future more rifts between close family members and their patients and there shall also be caution or guarded approach between psychiatrists and their patients when it comes to treatment.[13]

Loss of the Paternalistic Doctor Patient Relationship in some quarters

The act comes across to have an overoptimistic view by allowing treatment provisions across the country, including the underprivileged by not keeping in mind the ground realities. A proposed paternalistic doctor patient relationship exists and shall be done away with in the present scenario of our nation where still most of the population is from the rural background. In many urban cities too, there is a lack of awareness of mental health and mental illness and precious time is lost before care is sought.[14] The decision making and right of the patient to refuse a treatment or admission, without judgment and insight not only denies the psychiatry specialists from their responsibilities but also denies the patients from receiving optimal treatment for improving their quality of life. The possible harm to self (patient) and others is also not under supervision. This not only adds to the burden of the family and the caregiver fraternity but also is an economic liability for the nation.[15]

Advance Directives and Infrastructural Challenges due to the Act

The concept of advance directives, where on one hand, provides for clarity of statement, on the other hand is largely alien to our nation and its people. A concept borrowed from the West and proven to be largely ineffective in the Indian scenario, the act continues to lay emphasis on the redundant use of advance directives.[16] Another shortcoming of the act in terms of infrastructural provision by the government for the patients is the lack of information and adequate resources to make the facilities of half way homes and group homes available for people suffering from mental illnesses for community living. There is no mention about how the government will mobilize resources to render to the care of a large number of people suffering from mental illnesses. The act also fails to mention any kind of punishment or fine for government officials who fail to provide and deliver the quality of treatment promised to the people. The Rule of Law, the center piece of government is not enforceable for aggrieved parties to obtain remedies and there is no penal provision for the same.[17]

An added infrastructural deficit is the lack of a provision of direct ECT (electroconvulsive therapy) to patients who come in for emergency treatments.[18] ECT is also not to be provided to minor patients and ECT for the senior citizens is considered as 'unsafe'. This is a huge question that comes into play in a country like India where there is a deficiency of anesthetists or they are completely unavailable. One of the greatest issues with the act arises as it states no mention of prevention of exploitation of the

mentally ill in non-mental health institutions, where most of the population thrives and is exposed to several vulnerable circumstances.[20]

The General Hospital Psychiatry Units (GHPU) have been the success story of Indian Psychiatry but now, the act aims to get them under the purview of the act and GHPUs shall have to conformwith the norms and rules as all other mental health establishments and their licenses will be replaced by registration. The inclusion of the GHPUs is anomalous and this shall further affect the scarcity of mental health facilities available for providing services.[20]

The Mental Health Care Act also increases the stigmatization against mental health in a couple of ways. The provisions that are provided by the Indian government require an announcement of the person's mental health condition in order to avail the same for benefit and convenience. The constricted use of ECT further stigmatizes the use and importance for the patients and their families. The families are bound to face marginalization as they will be expected to knock the doors of the MHRB for treatment, which will only increase the total burden for the greatest resources of mental wellbeing. With an added concept of the nominated representative, the families are bound to possibly leave the patients with mental illnesses at their own fate. The inclusion of GHPUs under the ambit of the act will reduce the number of patients seeking psychiatric help in general hospitals where stigma was less and shall also result in extra paper work for such departments which shall put an extra burden on psychiatric resident doctors undergoing training there.[21]

Some Revisions that may be needed

The Mental Health Care Bill Act has come out after years of rigorous work, analysis and understanding. From custodial care provisions, the bill has come a long way to cater to the humane considerations and rights of the patients, which is a great deal of a consideration. The patient centric Mental Health Care Act decriminalizes suicide and provides for several rights of the patients such as –

- Right to have access to mental health care.
- Right to community living.
- Right to protection from cruel, inhuman and degrading treatment.
- Right to equality and non-discrimination.
- Right to Information.
- Right to confidentiality.
- Restriction on release of information.
- Right to access to medical records.
- Right to personal contacts and communications.
- Right to legal aid.
- Right to make complaints about deficiencies in the provisions of services.

However, in the wake of human rights, the act not only challenges the authority and responsibilities of the psychiatry fraternity but also denies several possible beneficial treatment outcomes for the patients. The act requires a clarification about the 'how' of resource provision by the government, definition of clinical psychologists and caregivers, the mental health review board which has more non-mental health professionals and the authority of responsibility and accountability. If implemented without these and many considerations(issues related to nominated representative, GHPU inclusion etc.) the act is to pose a great threat to the patient well being, directly or indirectly.[22]

Conclusions

The Mental Health Care Act is here to stay. There is a need for non governmental organizations, government bodies, psychiatrists – both in government service and private practice to come together and suggest to the state and central mental health authorities the problems that the act may pose and what is foreseen. These problems shall be clearer as we begin to follow the act which has now been implemented and the authorities and psychiatric fraternity have to keep an open mind to suggestions and changes that shall be needed as implementation gets underway. We all have to work together for the mental health benefits of our patients while salvaging the rights of the fraternity as well.

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Drug Review

Evenamide – A New Hope for Treatment Resistant Schizophrenia

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Introduction

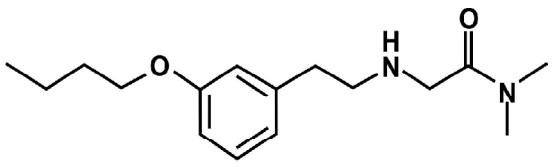
Over 70% of schizophrenic patients discontinue treatment with different types of older and new antipsychotics due to dissatisfaction with their therapeutic effects; median time to discontinuation ranges from 3–7 months.[1-3] Switching to another class or intergroup antipsychotic, except clozapine, do not yield better results.[4] These results reflect that it is essential to modulate mechanisms other than dopaminergic (DA)/serotoninergic (5-HT) systems to improve symptoms of schizophrenia.[5] The NMDA receptor (NMDAr) hypofunction[3] and hippocampal hyperactivity[1,2,6] are implicated in the dysregulation of mesolimbic DA and glutamate (Glu) neurons, leading to increasing synaptic activity of Glutamate in the prefrontal cortex. Augmenting the effects of current antipsychotics with Glutamate release inhibitors may improve symptoms of psychosis in patients with schizophrenia.[1,2,8]

Evenamide

Evenamide is a selective voltage-gated sodium channel blocker, including (and not limited to) subtypes Nav 1.3, Nav 1.7, and Nav 1.8, which is described as an antipsychotic as an add-on therapy for the treatment of schizophrenia.[9-12] The drug has shown efficacy in animal models of psychosis, mania, depression, and aggression.[11] Efficacy of evenamide has also been demonstrated in models of aggression and compulsive behavior, as well as in short- and long-term memory tests.[11] It has completed phase I clinical trials, and phase II band phase III Global clinical trials have commenced.[13] It is still an investigational drug under development by Newron Pharmaceuticals. The doses tried are capsule 15 mg and 30 mg twice daily. As it does not affect neurotransmitters, so it expected to be without major neurological or metabolic side-effects.

Table-1. Receptor Binding of Evenamide

Receptor	Evenamide (% binding at 10 micro M)
D1	5
D2L/D2S	-8/3
D3	3
5-HT1A	11 or 19 (2 studies)
5-HT2A	10
5-HT2C	17
5-HT6	8
5-HT7	35
Alpha 1	14
Alpha 2	14
H1	7
M1	5
M2	3
M3	1
M4	2
NMDAr (all sites)	0
Binding more than 50% (at 10 micro M) was found for these 3 receptors out of more than 130 targets tested	
Sigma 1	88
Sigma 2	63
Imidazoline 12 peripheral	54 (IC50 = 8.19 micro M)



Evenamide

Fig-1. Structure of Evenamide

Clinical data

Synonyms	NW-3509; NW-3509A
ATC code	• None
Identifiers	
IUPAC name [show]	
CAS Number	1092977-61-1
Pub Chem CID	25105689
Chem Spider	44208827
UNII	ON5S6N53JS
Chemical and physical data	
Formula	$C_{16}H_{26}N_2O_2$
Molar mass	278.390 g/mol g·mol^{-1}
3D model (JSmol)	Interactive image

Mechanism of action

Voltage-gated sodium channels play an essential biophysical role in many excitable cells such as neurons. They transmit electrical signals through action potential (AP) generation and propagation in the peripheral (PNS) and central nervous systems (CNS). Each sodium channel is formed by one alpha-subunit and one or more beta-subunits. The growing evidence indicates that mutations, changes in expression, or inappropriate modulation of these channels can lead to electrical instability of the cell membrane and inappropriate spontaneous activity observed during pathological states. In a review, Chahine et al[14] described the biochemical, biophysical and pharmacological properties of neuronal voltage-gated sodium channels (VGSC) and their implication in several neurological disorders.

Evenamide does not interact with monoaminergic (DA, 5-HT, NA, H) pathways affected by current antipsychotics, or with >130 different targets involved in CNS activity, except for sodium channels, leading to modulation of Glutamate release. Evenamide shows efficacy in animal models of schizophrenia as monotherapy and as an add-on to First Generation Antipsychotics (FGA) or Second Generation Antipsychotics (SGA), irrespective of whether impairment was spontaneous, or induced by amphetamine, NMDAr antagonists or stress. Evenamide, as monotherapy or add-on, has reversed ketamine- and PCP-induced worsening of Proton pump inhibition.[15]

Clinical Trials

At the onset of illness, rates of primary treatment resistance have been shown to be between 10-30% and around 30% of patients have partial responses to treatment.[15] Data show that glutamate levels are significantly higher in patients with treatment-resistant schizophrenia compared to healthy volunteers[16] and compared to patients with schizophrenia who were responsive to D_2 antagonists.[17]

In 2017, Newron presented the results of a Phase IIa study with Evenamide at the 16th International Congress on Schizophrenia Research in San Diego as well as the 30th European College of Neuropsychopharmacology Congress. The study demonstrated evidence of efficacy in significantly improving symptoms of psychosis compared with placebo when added to two of the most commonly prescribed atypical antipsychotics in patients with chronic schizophrenia. It also indicated that evenamide is devoid of an effect on any of the over 130 neurotransmitters, enzymes, or transporters targeted by most antipsychotics. These results, alongside earlier preclinical results, which indicated a glutamate antagonism mechanism of Evenamide.[18]

In a study by Anand et al,[15] 89 patients with Schizophrenia (mean baseline PANSS total: 62.9 ± 7.4; CGI-S : 3.5 ± 0.5), experiencing break-through psychotic symptoms on previously effective and stable doses of risperidone (mean dose: 4.2 ± 2.0 mg/day; n = 70) or aripiprazole (mean dose: 19.7 ± 7.0 mg/day; n = 19) were randomized (1.3 : 1 ratio) to treatment with evenamide or placebo. Analyses demonstrated the addition of evenamide to risperidone or aripiprazole was associated with statistically significant efficacy, based on the PANSS Positive Symptoms sub-scale (mean change, responders), and CGI-C responder rates. The study treatments were very well tolerated; 2 patients on evenamide discontinued treatment due to Adverse Events (atrial fibrillation and seizure). The most common adverse events (evenamide vs placebo), were somnolence (16 vs 12.8%), insomnia (10 vs 6%) and headache (6 vs 0%). No adverse effects such as extrapyramidal, endocrine or sexual side effects, or weight gain were noted.

Due to its neuronal stabilization properties, evenamide may reduce relapses and prevent or treat episodes of psychosis due to established supersensitivity psychosis (SSP) induced by antipsycho-

tics. As it is devoid of the risk of drug-induced movement disorders or weight gain, evenamide can be given in combination for extended periods of time.[18]

Because evenamide's efficacy was greater in younger patients, the next round of larger, longer clinical trials would focus on younger patients.

Efficacy of evenamide as add-on to antipsychotics would revolutionize development of novel antipsychotics targeting aberrant firing and Gluatamate transmission in schizophrenia. Potentially pivotal studies with evenamide are in planning to demonstrate that the addition of evenamide, a Glutamate release inhibitor, augments antipsychotic efficacy in patients worsening on current antipsychotics, and in patients with treatment-resistant SCZ not responding/worsening on clozapine.[15,19]

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Case Report

Amitriptyline Induced Restless Legs Syndrome

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Introduction

Restless legs syndrome (RLS) is a disorder characterized by an urge to move one's legs usually accompanied or caused by an unpleasant and uncomfortable sensation in the legs (or other body parts in addition to legs), motor restlessness with inactivity, relief (total or partial) by movement, worsening of symptoms in the evening or at night.[1]

The aetiology varies from an idiopathic form, genetic or unknown origin to other symptomatic forms associated with many causes.[2] Several medications may induce or exacerbate RLS such as antiemetics, antipsychotics, antihistamines, some antiepileptics or certain antidepressant drugs including the selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs) and Mirtazapine.[3] We present herewith a case of RLS that was induced by Amitriptyline.

Case Report

A 32-year-old Muslim Hindi speaking female residing at Mumbai educated till 12th standard, married homemaker had come to the OPD with complaints of low mood, which was pervasive in nature since the past 6 months following the loss of her husband's job. The symptom wasassociated with lack of interest in previously pleasurable activities, easy fatiguability, forgetfulness, diminished appetite and disturbed sleep (difficulty falling asleep with early morning awakening). The symptoms would be severe in the morning and reduce towards evening hampering day to day activities. She further complained of multiple unrelated somatic symptoms predominantly pain in multiple sites present for most part of the day. She denied feelings of helplessness, hopelessness or worthlessness or any death wishes or suicidal ideations.

There was no history suggestive of any other psychiatric or medical illness or substance use and there was no family history suggestive of psychiatric illness.

On mental status examination, she was well oriented to time, place and person, conveyed her mood as sad, had tearful affect, decreased speech rate and volume with increased reaction time. She had thoughts clouded with depressive themes and her Insight was Grade III. A clinical diagnosis of Major Depression and a diagnosis of Major Depressive Disorder as per DSM-5 criteria was made and severity on assessment was Moderate as per score of 18 on the Hamilton Depression Rating Scale.[4]

She was started on Tab. Amitriptyline 25 mg at night which was increased in a week to 50 mg and was asked to follow up for reassessment and dose titration. In the next follow up, she claimed 50% improvement in her mood but complained of restlessness and uncomfortable sensation in both her legs 7 days after starting Amitriptyline. The symptoms would be predominant at night impairing her sleep relieved on moving her legs. She did not give a history of similar complaints in the past. A baseline investigation was advised including Thyroid Function Test, Iron studies and Serum Creatinine which were all within normal limits. She was also suggested sleep hygiene techniques which did not cause any improvement in her symptoms. The patient followed up a week later with worsening of her lower limb sensations. The International Restless Leg Syndrome Study Group (IRLSSG)[5] rating scale was applied and a score of 23 was obtained suggestive of severe restlessness. It was concluded that the Amitriptyline had a potential role in the development of RLS in the patient and hence it was stopped and Tab. Escitalopram 10 mg at night was started.

The patient claimed 100% improvement in restlessness within 5 days of stopping Amitriptyline. When after consent, it was decided to rechallenge

the patient with Amitriptyline 25 mg at night a month later, the patient developed restlessness in her legs within 3 days of starting Amitriptyline and hence it was discontinued again. On the Naranjo Algorithm a score of +6 was obtained which suggests a strong cause and effect association.[6]

Discussion

Although the central dopaminergic system seems to be implicated in the development of the symptoms of RLS, its pathophysiology is still unknown.[7] Anecdotal case reports cite antidepressants such as SSRIs, SNRIs & Mirtazapine as known causes of the emergence or worsening of RLS symptoms.[8] The exact mechanism of Amitriptyline induced RLS is not fully understood. In the present case, we could not manage to relieve RLS symptoms by reducing the dose of Amitriptyline, so it was discontinued. If RLS discomfort is intolerable in case of drug discontinuance, other possible approaches that demonstrated efficacy in treating RLS may be suitable like a dopaminergic treatment such as Levodopa or Pramipexole or Ropinirole or drugs like Benzodiazepines, Opiates, Gabapentin and possibly Bupropion.[9]

This case describes a rare but important side effect associated with Amitriptyline. Clinicians should be aware of the potential of Amitryptiline in causing RLS symptoms. Moreover, this finding needs to be confirmed by well-designed chart reviews of Amitriptyline use in the future.

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Case Report

A case of Bipolar affective disorder with auto-immune encephalitis: Diagnostic and management approach

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Introduction

Autoimmune encephalitis is a group of diseases involving autoantibodies directed against synaptic and neuronal cell surface antigens causing neuro-inflammation. Removing these antibodies by plasma exchanges or immunotherapy generally induces clinical improvement.[1] Parallel to the link between psychiatric symptoms and autoimmune diseases, neuro-immunological abnormalities occur in classical psychiatric disorders (e.g. major depressive, bipolar, schizophrenia and OCD).[2] In addition to systemic autoimmune diseases associated with psychiatric manifestations (e.g. lupus), more recently patients with acute isolated psychosis were identified with synaptic autoimmune encephalitis.[3] These patients are often diagnosed with refractory primary psychotic disorders, thus delaying initiation of effective immune therapy. Here the authors have reported a case of bipolar affective disorder (BPAD) who presented with troublesome and disabling tremors and sialorrhoea which did not respond to adequate doses of trihexyphenidyl (THP) and symptoms persisted even after discontinuation of antipsychotic and finally diagnosed with co-morbid auto-immune encephalitis and responded well to immuno-suppressants.

Case Report

41-years-old male diagnosed with BPAD since 12 years with multiple manic and depressive episodes with complete recovery in affective and psychotic symptoms during inter-episodic period presented with extra pyramidal symptoms (EPS) in the form of tremors and sialorrhea at very low doses of anti-psychotics. The EPS appeared within first year of treatment when the patient was on olanzapine 30 mg and divalproex 1500 mg which though decreased in intensity but still persisted while olanzapine was reduced to 7.5 mg per day. Patient also had EPS while on escitalopram 20mg and divaloprex 1500 mg per day during first year of onset of illness. From past 5-6 years, patient persisted to have EPS even during inter-episodic period when he was on lithium 600-900mg per day along with lowest possible dose of either antipsychotic or SSRI. During active psychotic symptomatology when antipsychotics which included risperidone, olanzapine were to be increased, there would be worsening of tremors and sialorrhea and hence, antipsychotics could never be optimized further. There was a period when patient did not have any psychotic symptoms and was off antipsychotic but still had tremors and sialorrhoea. The tremors were initially of resting type which are specific for anti-psychotics but gradually became both resting and intention type during the course of illness which were very disabling for the patient and there was worsening in sialorrhoea to an extent that on some occasion his speech would be in comprehensible.

During the current episode patient presented

with an episode of severe depression with psychotic symptoms of 3 months' duration while he was on aripiprazole 10 mg and lithium 900 mg and THP 4 mg with baseline Brief Psychiatric Rating Scale (BPRS)[4] score 75, Hamilton Depression Rating Scale (HAM-D)[5] 22 and Simpson Angus Extra-pyramidal Side Effects Scale (SAS) [6] score of 15. After admission, the patient was stared on antipsychotics quetiapine as it has low propensity for EPS along with a mood stabilizer lithium and THP as he had disabling EPS in the form of tremors and sialorhoea which did not resolve even on discontinuing aripiprazole. The dose of quetiapine was gradually increased to 800 mg/day but patient did not show much improvement in either psycho-pathology or tremors even after a trial of adequate dose and duration i.e. 800 mg of quetiapine for 4 weeks. Therefore, a trial of second antipsychotic trifluoperazine (TFP)20 mg, lithium 600 mg and THP 6 mg was started and concurrently, in view of parkinsonism like features, Tab. Syn-Dopa was started by neurologist for 2 days which had to be discontinued on account of worsening of psychotic symptoms without any improvement in EPS. Therefore, a suspicion of underlying neurological cause was suspected; MRI Brain and auto-antibody profile was done. MRI findings were presence of T2/FLAIR white matter hyperintensities and age inappropriate bifrontal atrophy. In light of the patient being non-hypertensive and having a normal fundus examination, the white matter hyper-intensities were diagnosed as being owing to an underlying auto-immune pathology. Patient also had raised anti-TPO antibodies i.e. 207 (normal range 0-40). Based on MRI findings and raised anti-TPO titers, a diagnosis of auto-immune encephalitis was established. Patient was started on 5 days course of cortico-steroids and monthly infusion of cyclophosphamide (4 cycles given till date) along with same dose of anti-psychotic trifluoperazine 20 mg and lithium 600 mg. Patient improved significantly over 3 months period as evidenced by current BPRS score 16, HAM-D 4, significant reduction in EPS, SAS score 4 and anti-TPO titers of 112.

Discussion

To the best of our knowledge, this is the first comprehensive description of a patient with long term diagnosis of BPAD in which the latest episode was diagnosed with autoimmune encephalitis due to the fact that there were clear signs of neurologic dys-function i.e. disabling tremors and sialorrhea which could not be attributed only to anti-psychotics as the patient did not respond to anti-parkinsonian drugs and also had these symptoms while he was off anti-psychotics. In another case report in which a 52-year-old woman who has been diagnosed with encephalitis after presenting with recurrent and severe psychosis diagnosed as schizophrenia for 15 years in conjunction with thyroidopathy, produced complete resolution of psychosis with a five-day course of one gram daily intravenous methylpredni-solone sodium succinate.[7] Innate inflammation/ autoimmunity may be relevant to the pathogenesis of psychiatric symptoms in a subset of patients with classical psychiatric disorders.[2] In the indexed case also, a positive correlation was found between the antibody titers, psychopathology and the neurological symptoms which improved over a period of time when appropriate treatment i.e. immunosuppresants were given along with psychotropics. Therefore, one should be vigilant enough to rule out underlying neurological cause especially in atypical presentation of psychiatric disorder.

Conclusion

Autoimmune encephalitis is a steroid responsive encephalopathy in which the symptoms may occur either episodically or with insidious progression along the disease course. Hence, while treating a patient with psychotic symptoms having disabling neurological symptoms, it is prudent to keep the possibility of co-morbid autoimmune encephalitis, so that necessary treatment can be initiated at the earliest and further worsening of neurological symptoms can be prevented and also the use of anti-parkinsonian drugs can be minimized.

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Case Report

Sleep Bruxism due to Paroxetine

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Introduction

Bruxism comes from the Greek word "brychein" for "gnashing of the teeth."[1] The term "bruxism" comes from "bruxomania" which first appeared in the literature in an article by Marie and Pietkiewcz cited by Ramfjord,[2] but was first used by Frohman,[3] to define the problem of a dental nature, resulting from non-physiological movements of the mandible especially in stress. It is characterized by a non-functional convergence of teeth and disorders of the temporomandibular articulation and chewing muscles.[4,5] While people also grind their teeth while awake, sleep bruxism is generally a bigger health concern.

Sleep bruxism affects 5-8% of the adults and 14-20% of children.[5] The overall prevalence is 8–31.4% [22.1–31% - awake bruxism; 9.7–15.9% - sleep bruxism], and it is equally common in both genders.[6]

Common symptoms of bruxism include tooth pain, jaw pain, unexplained facial pain, headaches, changes in the shape of teeth, broken or chipped teeth, crowns or fillings andcomplaints of grinding or gnashing sounds at night and affecting quality of sleep.[7]

The risk factors for bruxism include role of genetic factors, stress, age, other sleep disorders such as sleep apnea, personality type (aggressive, competitive or hyperactive), use of antidepressants or regular use of alcohol, caffeinated products and tobacco.[4, 8-11] Bruxists are classified into stress type and non-stress type."Stress" bruxism is more in emotionally disturbed individuals and may result due to tension, habit, interference with occlusion, occupation, marital status, job problems, worry and hurry, and so on.[12,13]

A diagnosis of bruxism is usually made clinically,[14] and is mainly based on the person's history (e.g. reports of grinding noises) and the presence of typical signs and symptoms, including tooth mobility, tooth wear, masseteric hypertrophy, indentations on the tongue, hypersensitive teeth (which may be misdiagnosed as reversible pulpitis), pain in the muscles of mastication, and clicking or locking of the temporomandibular joints.[15] Questionnaires can be used to screen for bruxism in both the clinical and research settings.[16]

We report a case of sleep bruxism resulting due to paroxetine.

Case Report

A 32-year-old mancame to was referred from Dental OPD for pain in teeth and jaw since last five weeks. Pain had exaggerated recently and was severe in nature. The pain was more intense in the morning. The patient was not aware of any forceful biting and grinding of his teeth during night.The patient reported that he also had developed deceased interest in working, sad mood, decreased appetite and disturbed sleep 3 months back. He consulted a private psychiatrist who had started paroxetine 25 mg daily, which was increased to 37.5 mg in 3 weeks. The patients' wife noticed his mood has improved but the complaint of grinding or gnashing sounds at night had appeared affecting her sleep. She brought the patient to dental OPD to rule out any dental problems.

There was no history of tobacco chewing, smoking or excessive intake of caffeinated drinks. Past history and family history was negative for any

chronic physical and psychiatric disorder or drug abuse.Routine blood investigations, X-ray chest, thyroid function tests, EEG and CT scan were normal.

On intraoral examination, the periodontium showed normal, healthy clinical features. The X-ray picture was also normal. Extra orally, the patient exhibited mild tenderness in the region of TMJ and masseter muscle. No abnormality was detected on TMJ movement. There was no history of recent Dental treatment. The patient was diagnosed as a case of bruxism.

The patient was advised to gradually taper off paroxetine in 2 weeks and he was gradually shifted to Duloxetine 60 mg daily. The problem of bruxism disappeared in 3 weeks. On follow-up at two months, the patient had remission of depressive symptoms and there was no appearance of sleep bruxism.

Discussion

The majority of the population at some point of time during their lifetime grind or clench their teeth. It becomes a pathological condition when the subject presents severe tooth damage or complains of non-restorative sleep.[17]

Bruxism has been described due to many drugs e.g. levodopa, fluoxetine, metoclopramide, lithium, cocaine, venlafaxine, citalopram, fluvoxamine, methylen edioxyamphetamine (MDA), methylphenidate (used in attention deficit hyperactive disorder), and gamma-hydroxybutyric acid (GHB) and similar gamma-aminobutyric acid-inducing analogues such as phenibut.[10] SSRIs have been implicated in producing bruxism.[10] The present case was due to paroxetine, as it appeared after its intake and stopped after discontinuation. A rechallenge to drug could not be given on ethical ground.

"Stress" bruxists have more muscular symptoms and are seen more in emotionally disturbed individuals. In the present case, there was no identifiable stress. Treatment options involve occlusal correction, behavioral change, and pharmacological approach.[14-17] Lifestyle modifications can reduce symptoms and improve sleep quality. Meditation, yoga and deep breathing exercises can reduce stress[11,14] Hypnosis has also been successfully used.[11,14,18] Clobazam has also been successfully used.[19]

In a dental clinic, the commonest method of bruxism treatment is by using habit breaking appliances such as Hawley's appliance or occlusal splints.[15] In the present case, no dental intervention or hypnosis was given and he improved on discontinuation of paroxetine.

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Book Review

Inhalant Addiction – "The Silent Epidemic"

Sanjeev Prasad

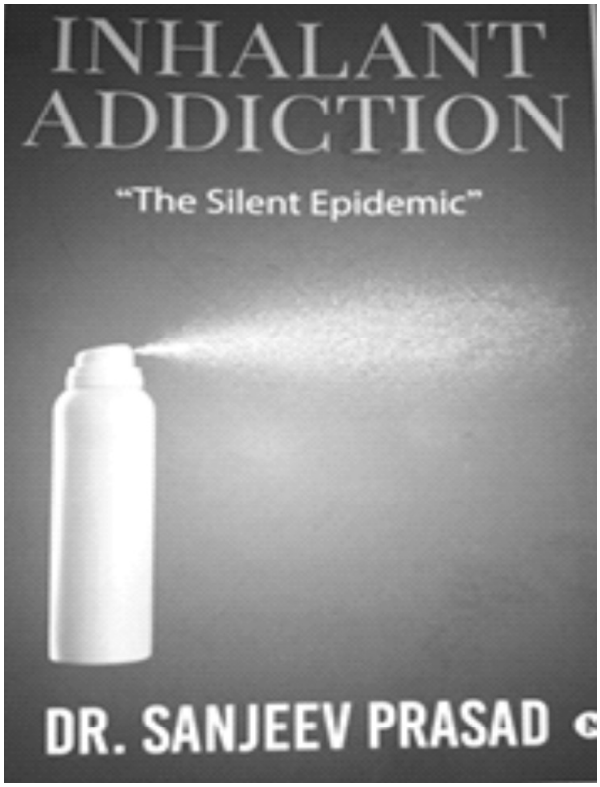
The field of addiction and de-addiction has always been intriguing and full of challenges. Addiction affects not only the individual but also, the family, society and country. Addiction leads to psychological, physical, familial, societal and medico-legal complications. It also causes an immense financial burden on the health delivery system as well.

There are many books written on different types of addiction but a book exclusively on inhalant addiction, that is by an expert with experience of over three decades as a grass root worker, an awareness generation professional and head of de-addiction centers, is a welcome addition.

The book is divided in 18 chapters and spread over 185 pages. The initial chapters are dedicated to historical aspects, epidemics of drug abuse, causes of craving and neurobiological basis.

Inhalant addiction has been described in detail which includes definition and classification of inhalants, characteristics of abusers, pathophysiology, metabolism, mode of action and medical effects. The epidemiological characteristics of various inhalants as well as abusers are described in a separate chapter. The significant portion of the book describes symptoms and signs of inhalants addiction and intoxication and their medical complications. The diagnosis, treatment and rehabilitation has been described in detail. A separate chapter describes the worldwide grim picture and law.

The book is an important supplement in addiction medicine. It will be useful for students working in psychiatry, medicine and paramedical branches. It is also a guide for NGOs working in the field of addiction. The book is written in a simple language



to provide information and create awareness in general public. The book needs translation in other languages and will require regular updating.

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Interesting Articles

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- **Associations of adverse childhood experiences and social support with self-injurious behaviour and suicidality in adolescents.** Wan, et al. https://doi.org/10.1192/bjp.2018.263. Published online: 27 November 2018; 146-152.
- **Childhood abuse and psychotic experiences in adulthood: findings from a 35-year longitudinal study.** Bell, et al. https://doi.org/10.1192/bjp.2018; 264 Published online: 27 November 2018; 153-158.
- **Clozapine is associated with secondary antibody deficiency.** Ponsford, et al. https://doi.org/10.1192/bjp.2018.152. Published online: 12 September 2018; 83-89.
- **Longitudinal assessment of an anti-stigma campaign related to common mental disorders in rural India.** Maulik P, et al. https://doi.org/10.1192/bjp.2018.190. Published online: 24 September 2018; 90-95.
- **Treatment-resistant depression and peripheral C-reactive protein.** Chamberlain SR, et al. https://doi.org/10.1192/bjp.2018.66. Published online: 16 May 2018; 11-19.
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- **Augmentation therapies for treatment-resistant depression: systematic review and meta-analysis.** Strawbridge R, et al. https://doi.org/10.1192/bjp.2018.233. Published online: 20 November 2018; 42-51.
- **Prevalence of personality disorders in the general adult population in Western countries: systematic review and meta-analysis.** Volkert J, et al. https://doi.org/10.1192/bjp.2018.202. Published online: 28 September 2018; 709-715.
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- **Anxiety as a risk factor of Alzheimer's disease and vascular dementia.** Becker E, et al. https://doi.org/10.1192/bjp.2018.173. Published online: 28 September 2018; 654-660.
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- **When Discontinuing SSRI Antidepressants Is a Challenge: Management Tips.** Jha MK, et al.Pages:1176–1184.Published Online:1 December 2018. https://doi.org/10.1176/appi.ajp.2018.18060692
- **Perspectives on the Management of Vascular Depression.** Taylor WD, et al. Pages:1169–1175. Published Online:1 December 2018. https://doi.org/10.1176/appi.ajp.2018.18050568
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Forthcoming Events

- **11th International Congress on Psychopharmacology & 7th International Symposium on Child and Adolescent Psychopharmacology 2019**. 18 Apr 2019 - 21 Apr 2019 • Antalya, Turkey. Event website: http://www.psychopharmacology2019.org/
- **ISCP — 26th International Symposium on Controversies in Psychiatry (Barcelona & Live Video Streaming).** 25 Apr 2019 - 27 Apr 2019 • Barcelona, Spain. Event website: http://www.controversiasbarcelona.org
- **Canadian Academy of Psychiatry and The Law Annual Conference 2019**. 28 Apr 2019 - 01 May 2019 • West Montréal, QC, Canada. Event website: http://www.capl-acpd.org/capl-conference/
- **International Society for Autism Research Annual Meeting 2019.** 01 May 2019 - 04 May 2019, Montreal, Canada. Event website: https://www.autism-insar.org/general/custom.asp?page=FutureEvents
- **Royal Australian and New Zealand College of Psychiatrists Annual Meeting 2019.** 12 May 2019 - 16 May 2019 • Cairns City, Australia. Event website:https://www.ranzcp2019.com.au/
- **Improving Outcomes in the Treatment of Opioid Dependence 2019.** 13 May 2019 - 14 May 2019 • Frankfurt, Germany. Event website: http://www.iotodeducation.com/
- **Canadian Counselling and Psychotherapy Association 2019.** 13 May 2019 - 16 May 2019 • Moncton, Canada. Event website: https://www.ccpa-accp.ca/continuing-education/annual-conference/
- **American Academy of Psychoanalysis & Dynamic Psychiatry 63rd Annual Meeting 2019.** 16 May 2019 - 18 May 2019 • San Francisco, United States. Event website: http://aapdp.org/index.php/new-meetings/meeting-details/63rd_annual_meeting_-_san_francisco_california_-_may_16-18_2019/
- **Southeastern Symposium on Mental Health 2019**. 17 May 2019 - 18 May 2019 • Greenville, United States. Event website: http://sesmh.org/
- **American Psychiatric Association Annual Meeting 2019**. 18 May 2019 - 22 May 2019 • San Francisco, United States. Event website: https://www.psychiatry.org/psychiatrists/meetings/annual-meeting
- **6th Maudsley Mediterranean Forum 2019**. 27 May 2019 - 30 May 2019 • Palermo, Italy. Event website: https://www.mediterranean-maudsley-forum.co.uk/
- **American Society for Clinical Psychopharmacology Annual Meeting 2019**. 28 May 2019 - 31 May 2019 • Scottsdale , AZ, United States. Event website: https://ascpmeeting.org/
- **18th Annual Workshop on Clinical Trials in Psychopharmacology 2019**. 28 May 2019 - 31 May 2019 • Scottsdale, United States. Event website: https://ascpmeeting.org/
- **Spanish Association of Child and Adolescent Psychiatry 63rd Annual Meeting 2019**. 30 May 2019 - 01 Jun 2019 • Oviedo, Spain. Event website: https://aepnya.es/
- **West Coast Symposium on Addictive Disorders 2019**. 30 May 2019 - 02 Jun 2019 • La Quinta, United States. Event website: https://www.wcsad.com/
- **Adhd-Conference — A Critical Appraisal of Etiology, Diagnosis, and Therapy of Attention Deficit Hyperactivity Disorder**. 13 Jun 2019 - 15 Jun 2019 • Regensburg, Germany. Event website: https://www.uni-regensburg.de/psychologie-paedagogik-sport/psychologie-lange/adhd-conference/index.html
- **Mayo Clinic Psychiatry Board Review 2019**. 20 Jun 2019 - 22 Jun 2019 • Minneapolis, United States. Event website: https://ce.mayo.edu/psychiatry-and-psychology/content/psychiatry-board-

reviews-2019

- **European Society for Child and Adolescent Psychiatry 18th International Congress 2019**. 30 Jun 2019 - 02 Jul 2019 • Vienna, Austria. Event website: https://www.escap.eu/escap-congresses/2019-vienna
- IFMAD2019 — **18th International Forum on Mood and Anxiety Disorders.** 04 Jul 2019 - 06 Jul 2019 • Vienna, Austria. Event website: http://www.ifmad.org/2019/
- IKTTP 2019 — **Internationaler Kongressüber Theorie und Therapie von Persönlichkeitsstörungen** 05 Jul 2019 - 07 Jul 2019 • Munich, Germany. Event website: https://www.ikttp.de/
- **Royal Australian and New Zealand College of Psychiatrists Section of Psychotherapy Annual Conference 2019**. 12 Jul 2019 - 14 Jul 2019 • Barcelona, Spain. Event website: https://www.ranzcp.org/publications/Events
- ICCAP2019 — **14th International Conference on Child and Adolescent Psychopathology.** 22 Jul 2019 - 24 Jul 2019 • London, United Kingdom. Event website: https://www.iccapconference.com/
- **19th WPA World Congress of Psychiatry 2019**. 21 Aug 2019 - 24 Aug 2019 • Lisbon, Portugal. Event website: https://2019.wcp-congress.com/
- **32ND ECNP Congress 2019.** 07 Sep 2019 - 10 Sep 2019 • Copenhagen, Denmark. Event website: https://2019.ecnp.eu/.aspx
- **The Herbert Benson, MD Course in Mind Body Medicine.** 23 Oct 2019 - 25 Oct 2019 • Boston, MA, United States. Event website: https://mindbody.hmscme.com/
- **Psychiatrie und Psychotherapie Update Refresher.** 04 Nov 2019 - 05 Nov 2019 • Vienna, Austria. Event website: https://www.fomf.at/psychiatrie-und-psychotherapie-update-refresher-wien-1119
- **Gordon Research Seminar — Neurobiology of Drug Addiction.** 15 Aug 2020 - 16 Aug 2020 • Newry, ME, United States. Event website: https://www.grc.org/find-a-conference/
- ECNP — **33rd ECNP Congress**. 12 Sep 2020 - 15 Sep 2020 • Vienna, Austria. Event website: https://2020.ecnp.eu/

Other Events

- **International Conference on Addiction and Associated Disorders 2019.** May 6, 2019 - May 8, 2019. London, England, United Kingdom.
- **Improving Outcomes in the Treatment of Opioid Dependence 2019**. May 13, 2019 - May 14, 2019.0 Frankfurt, Germany.
- **World Psychiatric Association Thematic Conference on Dementia: Psychiatric and Neurological Challenges and Perspectives 2019**. May 15, 2019 - May 18, 2019 Ohrid, Macedonia.
- **26th Annual International Stress and Behaviour Neuroscience and Biopsychiatry Conference 2019**. May 16, 2019 - May 19, 2019. St-Petersburg, Russia.
- **American Academy of Psychodynamic Psychiatry and Psychoanalysis 63rd Annual Meeting 2019**. May 16, 2019 - May 18, 2019. San Francisco, United States.
- **American Academy of Psychoanalysis & Dynamic Psychiatry 63rd Annual Meeting 2019**. May 16, 2019 - May 18, 2019. San Francisco, United States.
- **Nei Synapse 2019**. May 26, 2019 - May 28, 2019. Asheville, North Carolina, United States
- **14th World Congress of Biological Psychiatry 2019**. June 2, 2019 - June 6, 2019. Vancouver, Canada.

- **Current Psychiatry / American Academy of Clinical Psychiatrists Focus on Neuropsychiatry 2019**. June 14, 2019 - June 15, 2019. Arlington, Va, United States
- **3rd World Congress and 6th International Congress on Dual Disorders 2019**. June 19, 2019 - June 22, 2019. Madrid, Spain
- **Mayo Clinic Psychiatry Board Review 2019**. June 20, 2019 - June 22, 2019. Minneapolis, United States
- **European Society for Dermatology and Psychiatry 18th Congress 2019**. June 20, 2019 - June 22, 2019. Giessen, Germany
- **Mayo Clinic Psychiatry Board Reviews 2019**. June 20, 2019 - June 22, 2019. Minneapolis, Minnesota, United States
- **Japanese Society of Psychiatry and Neurology 115th Annual Meeting 2019**. June 20, 2019 - June 22, 2019. Niigata, Japan
- **Research Society on Alcoholism 42nd Annual Scientific Meeting 2019**. June 22, 2019 - June 26, 2019. Minneapolis, Minnesota, United States
- **Begin before Birth 2019**. June 27, 2019 - June 27, 2019. London, United Kingdom
- **International Congress of The Royal College of Psychiatrists 2019**. July 1, 2019 - July 4, 2019. London, United Kingdom.
- **18th International Forum on Mood and Anxiety Disorders 2019**. July 4, 2019 - July 6, 2019. Vienna, Austria.
- **Stress and Anxiety Research Society 40th Annual Meeting 2019**. July 9, 2019 - July 12, 2019. Palma De Mallorca, Spain.
- **British Association For Psychopharmacology 2019**. July 14, 2019 - July 17, 2019. Manchester, United Kingdom.
- **Clinical Overview of The Recovery Experience 2019**. July 14, 2019 - July 17, 2019. Amelia Island, Fl, United States.
- **9th World Congress of Behavioral and Cognitive Therapies 2019**. July 17, 2019 - July 20, 2019. Berlin, Germany.
- **Australian and New Zealand Mental Health Association 20th International Mental Health Conference 2019**. July 31, 2019 - August 2, 2019. Benowa, Australia
- **National Conference on Alcohol & Addiction Disorders 2019**. August 14, 2019 - August 18, 2019, Baltimore, United States.
- **10th Annual Integrative Medicine for Mental Health Conference 2019**, August 15, 2019 - August 18, 2019, San Diego, United States
- **19th Wpa World Congress of Psychiatry 2019**, August 21, 2019 - August 24, 2019, Lisboa, Portugal
- **Mayo Clinic - A Systematic Approach to Medically Unexplained Symptoms 2019**, August 22, 2019 - August 24, 2019, Marina Del Rey, United States.
- **Themhs Conference 2019**, August 27, 2019 - August 30, 2019, Brisbane, Australia.
- **International Society for Psychological and Social Approaches to Psychosis 21st International Congress 2019**, August 28, 2019 - September 1, 2019, Rotterdam, Netherlands.
- **Refocus on Recovery 2019**, September 3, 2019 - September 5, 2019, Nottingham, United Kingdom.
- **Swiss Society for Psychiatry and Psychotherapy Annual Congress 2019**, September 4, 2019 - September 6, 2019, Bern, Switzerland.

- **Cape Cod Symposium on Addictive Disorders 2019**, September 5, 2019 - September 8, 2019, Hyannis, Ma, United States.
- **Mayo Clinic Fibromyalgia: Clinical Review and Strategies for Managing your Patients 2019**, September 6, 2019 - September 6, 2019, Rochester, Mn, United States.
- **European College of Neuropsychopharmacology 32nd Congress 2019**, September 7, 2019 - August 10, 2019, Copenhagen, Denmark, Denmark.
- **Maudsley Forum 2019**, September 10, 2019 - September 13, 2019, London, United Kingdom.
- **Canadian Psychiatric Association Annual Conference 2019**, September 12, 2019 - September 14, 2019, Québec, Canada.
- **International Association for Suicide Prevention 30th World Congress "Breaking Down Walls & Building Bridges" 2019**, September 17, 2019 - September 21, 2019, Derry-Londonderry, United Kingdom.
- **Ranzcp New Zealand Conference 2019**, September 18, 2019 - September 20, 2019, Nelson, New Zealand.
- **European Society For Biomedical Research on Alcoholism 2019**, September 21, 2019 - September 24, 2019, Lille, France.
- **7th European Conference on Schizophrenia Research 2019**, September 26, 2019 - September 28, 2019, Berlin, Germany.
- **32nd Annual Psych Congress 2019**, October 3, 2019 - October 6, 2019, San Diego, United States.
- **Masterpsych Psychiatry Conference 2019**, October 3, 2019 - October 6, 2019, La Jolla, United States
- **32nd Annual Psych Congress 2019**, October 3, 2019 - October 6, 2019, San Diego, United States.
- **Masterpsych Psychiatry Conference 2019**, October 3, 2019 - October 6, 2019, La Jolla, United States.

Guidelines

Instructions to Authors

Aims and Scope of the Journal

This journal is aimed to help in the academic development of its readers. To accomplish the objectives we publish following sections in the journal: Original articles, reviews, view points, short reports, case reports letters and newer developments.

Prior Publication

All the articles are published in this journal with the understanding that they have never been published or accepted in any journal previously or submitted to any other journal simultaneously. However, publication of abstracts in conference's abstract book will not be considered as prior publication if such abstracts are limited to 300 words. It includes all kind of printed material (whether scientific or not), symposia, panel discussion, paper/ poster presentation, workshops etc. If author/s are submitting any other paper with overlapping content to any other journal, they must inform the editor with the explanation of the differences in the paper.

Submission of the manuscript

Manuscripts should **preferably be submitted online** at the journal's account: dps_journal@ yahoo.co.in or manbhatia1@rediffmail.com. Receiving of the manuscript will be acknowledged within no more than ten working days, failing which authors are free to submit it elsewhere. However, it is advisable that they make sure that the mail has not returned and recipient mail-id is filled correctly. Authors who want to submit hard copy of manuscripts must send 2 copies along with CD to editorial office – Department of Psychiatry UCMS and GTB Hospital, Dilshad Garden, Delhi-110095 (India).

Authorship

All persons designated as authors must qualify authorship criteria. It implies that all the authors have participated sufficiently to take the public responsibility of the content. Authorship credit should be based on substantial contributions to (1) conception and design or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, and on (3) final approval of the version to be published. Conditions 1, 2, and 3 must all be met. Participation solely in the acquisition of funding or the collection of data does not justify authorship. Other persons involved in the study may be acknowledged at the end of the manuscript.

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it should be signed by all authors. Signature of the co-authors will be responsibility of correspon-ding author.

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All the articles will be peer reviewed, and name of the reviewers and authors will be kept confidential. Authors will be supplied comments of the reviewers along with the decision on the manu-script.

Type of articles and word limit

We publish review articles, original articles, case reports in the field of psychiatry and allied branches e.g., neuropsychiatry, adult psychiatry, child psychiatry, geriatric psychiatry, psychosomatics, addiction, forensic psychiatry, newer developments etc.

Review articles are invited from the experts of the fields only and authors wish to send the review article must take the written permission of the editor beforehand. Word limit for review article is 5000 words with maximum of 50 references.

Original articles must not exceed 3000 words with maximum 30 references and should contain original unpublished research.

Care reports should not exceed 1000 words and a maximum of 10 references.

Setting of Manuscripts

All the pages must be numbered starting from title page. The manuscript should be typed on A4 size paper with 1 inches margin and should be double-spaced. All abbreviations should be mentioned when they first appear in the text as well as on the abstract page below key words.

Title Page

Title page must contain type of article, title and running title not exceeding 40 characters on the top of it. In the byline authors name (last name, first name followed by initials of middle name) and highest academic qualifications must be mentioned. Department and institution to which the work should be attributed should be mentioned below authors name.

Following it, name, address, telephone number and e-mail address of the corresponding author must be mentioned.

Total number of words in the text (excluding abstract and references), total number of tables, figures should be mentioned thereafter.

Any acknowledgement (if any) must be cited at the bottom of this page.

It must be made sure that following pages does not have any information that may disclose the identity of the authors/institution to which the work is attributed.

Second page

It should contain title of the manuscript, abstract and at least three key words. Abstract should be structured in following sections: introduction; objectives, method, results and conclusions.

Start each of following section on a separate page.

Introduction: State the object of research with reference to previous work.

Methods: Describe methods in sufficient detail so that the work can be duplicated, or cite previous descriptions if they are reality available.

Results: Describe results clearly, concisely, and in logical order. We possible give the range, standard deviation, or mean error, and significance of differences between numerical values.

Discussion: Interpret the result and relate them to previous work in the field.

Tables : All tables must be created using the table function in a word processor program and also must conform to a one - (3.25") or two-column (6.5") format. Prepare each table with a title above and and any description below the table. Tables should be self-explanatory and should not duplicate textual material. They must be numbered and cited in consecutive order in the text, and must have a short title. Tables consisting of more than 10 columns are not acceptable. Previously published tables must have a signed permission from the publisher and complete reference data so that appropriate credit can be given. Tables must be given after references while sending the manuscript.

Figure : As far as possible, figures should be black and white. They should contain title and should be numbered. They should be mentioned in text according to their number.

References: Delhi Psychiatry Journal complies with the reference style given in "Uniform Requirements for Manuscripts Submitted to Biomedical Journals" (see Ann Intern Med 1997; 126 : 36-47 or online at http://www.acponline.org).

References should be cited in Vancouver style in the manuscript. In the text they should be cited by superscript Arabic numerals and in references they should be cited in the order of their appearance in the text. First 3 authors should be cited (followed by et al. if more than 3 authors and their name should be in following sequence: Last name followed by initials of first and middle names. Each author's name should be separated by comma. It should be followed by title of manuscript, journal's name as cited in index medicus, year of publication, volume, issue and page number.

For clarification see following reference styles.

Sample citations

According to our previous work,[1,3-8,19]
The Patient's were studied as follows.[3,4]

Sample References

- **Articles**
  1. Roest AM, Zuidersma M, de Jonge P. Myocardial infarction and generalised anxiety disorder : 10-year follow up. Br J Psychiatry 2012; 200 : 324–329.
  2. Bremner JD, Shearer KD, McCaffery PJ. Retinoic acid and affective disorders: The evidence for an association. J Clin Psychiatry 2012; 73 : 37–50.
- **Book**
  1. Stahl SM. The Prescriber's Guide (Stahl's Essential Psychopharmacology, 4th ed. Cambridge, U.K.: Cambridge University Press, 2011.
- **Chapter of a book**
  1. Blacker D. Psychiatric Rating Scales In: Sadock BJ, Sadock VA, editors. Kaplan and Sadock's Comprehensive Text Book of Psychiatry. Vol. I. Philadelphia: Lippincott Williams and Williams; 2000. pp 755-782.

Personal communication and unpublished data should not be used for the reference.

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