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COVID 19 and rise of mental health issues

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COVID 19 pandemic has affected the entire human community. An unprepared public health emergency with no definitive treatment in the initial days, high morbidity and mortality, and negative communication regarding effective vaccination has led to a range of emotional reactions.[1] In addition to these, economic impact, loneliness due to quarantine, stigma regarding illness, uncertainty of day-to-day life has added further issues.

Patho-physiology

Viral illnesses are known to be associated with disorders like Schizophrenia, depression, OCD and Bipolar disorder. Neuro-inflammation caused by viruses leads to psychiatric disorders.[2]

Evolving evidences are helping us to understand the neurotropic properties of SARS-CoV-2 virus. Early involvement and rapid retrograde axonal transport of virus to olfactory bulb leads to loss of smell and taste. Virus can enter brain through endothelial cells lining the blood-brain barrier and vagus nerve.[3] Cytokine storm, a dreaded immune reaction in COVID, can activate brain glial cells, which may lead to delirium.

Few other proposed mechanisms are- 1) aberrant epigenetic modifications of stress – related genes.[4] 2) Neuropsychiatric effect of drugs used to treat the infection and their complications. 3) High dose corticosteroids and their behavioral toxicity.

Mental Health Problems

Few research studies done during COVID-19 pandemic have found that 40% of patients suffer from anxiety, depression, insomnia.[5] Few reports of mania and precipitation of psychotic symptoms were noted post discharge.

Post-traumatic stress disorder can also be seen in survivors of COVID 19, who have suffered and lost their families during the pandemic.

Sleep loss elevates inflammatory cytokines. Low grade inflammation and disproportionate host immune reactions with release of cytokines may precipitate cytokine storm. So, a healthy lifestyle, good sleep, diet and exercise may be protective against developing severe COVID 19 complications.

In Indian context, limited resources, less trained health care professionals and an overburdened healthcare system has led to burn out. Despite these limitations, the entire health community has served the public and helped them to handle the acute health crisis.

Role of Doctors during Pandemic

As a responsible health care professional, one should shun ambivalence, thoughts of negative outcomes regarding mortality and act in the best interest of patient's well-being. We should accept all the results with equanimity, without guilt. We should encourage others working during this pandemic to uphold the dignity of work by maintaining self-discipline, mindfulness and self-reflective attitudes.

As a practicing psychiatrists, we should be prepared to handle the upcoming challenges arising out of COVID crisis in future and develop appropriate preventive approaches. Governmental agencies, public and private societies, NGO'S should work on models to improve resilience among health care professionals and the general public.

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Burnout syndrome in healthcare professionals

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"Never overestimate the strength of the torchbearer's arm, for even the strongest arms grow weary"

Introduction

Burnout is the result of chronic stress in workplace which has not been dealt successfully.[1] It is characterized by emotional exhaustion, depersonalization and reduced personal accomplishment.[2]

Psychoanalyst Freudenberger,[3] published one of the first scientific descriptions of the burnout syndrome as psychiatric and physical breakdown.

In 1981, Maslach introduced an instrument for measuring burnout, the Maslach Burnout Inventory[4,5] which is widely used even today.

Burnout Syndrome

Burnout syndrome is a state of emotional, physical and mental exhaustion caused by excessive and prolonged work related stress. It is a work-related constellation of symptoms that is diagnosed in individuals without any prior history of psychological or psychiatric disorders. Freudenberger described its development in a 12-stage model (Fig. 1).[6] Currently this model has been simplified and a 5-stage model is most frequently used. This 5-stage model is depicted in the Fig. 2.

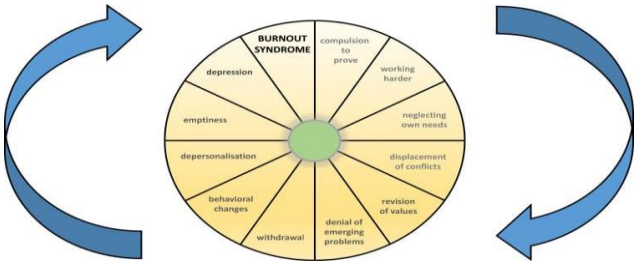

Fig. 1:

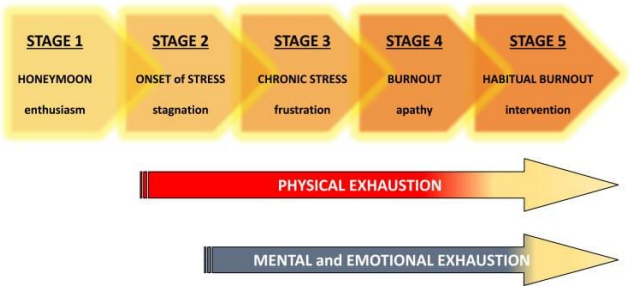

Fig. 2:

Initially individuals feel emotional stress and increasing job-related disillusionment. Subsequently, they lose the ability to adapt to the work environment and display negative attitude towards their job, their co-workers, and their clients.[7]

The decisive elements of burnout syndrome are exhaustion, depersonalization, and reduced satisfaction in performance.[8]

Etiopathogenesis

The etiopathogenesis of burnout is multifactorial. It is triggered by a discrepancy between the expectations and ideals of the employee and the actual requirements of their position.[7] It is best explained by psychological explanatory models. The job demand-control model focuses on job task profile (job demand vs control, Fig. 3) and effort-reward imbalance model focuses on the work contract (effort vs reward, Fig. 4).[9,10]

ICD-10 Vs DSM

In the 10th revision of the International Classification of Diseases (ICD 10) the term 'burnout' was described under Z.73.0 as 'Burnout-state of total exhaustion'.[11] Burnout emerged as a condition in ICD-10 and 11 as occupational stress. So far it is not an entity in DSM and is considered among adjustment and stress related disorder.[12]

Magnitude of the Problem

Healthcare professionals at the front line of care (family medicine, emergency medicine, general internal medicine, and critical care) report the highest rates of Burnout in excess of 40%. Working in an Intensive Care Unit (ICU) can be especially stressful due to high patient morbidity and mortality. Challenging daily work routines, and routine encounters with traumatic and ethical issues will increase the stress. This level of nearly continuous stress can rapidly accelerate when caregivers perceive that there is insufficient time or limited resources to properly care for patients. Unfortunately, critical healthcare professionals have one of the highest rates of burnout. Based upon multiple studies, approximately 25-33% of critical care nurses manifest symptoms of severe burnout, and up to 86% have at least one of the three classic symptoms. When compared to other types of nurses, burnout occurs more commonly in critical care nurses. Burnout Syndrome is also common in critical care physicians.[13] Up to 45% of critical care physicians reported symptoms of severe Burnout. Among pediatric

critical care physicians the prevalence of Burnout is 71% which is more than twice the rate in general pediatricians.[14] Burnout syndrome is highly common among resident doctors, as they are new to the field and often considered incompetent by patients and seniors and have tremendous work load cum responsibility. On an average 2/3rd of residents at one time and 90% of students in the period of their residency have a history similar to Burnout syndrome.[15]

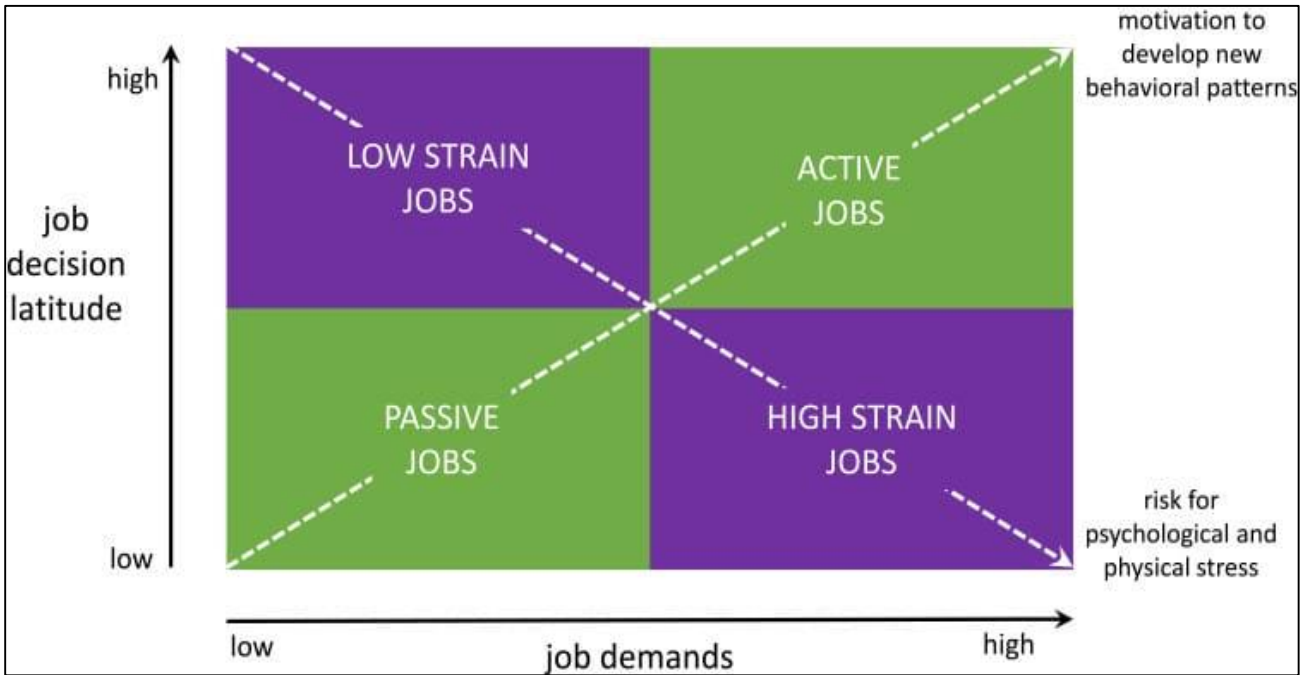

Fig. 3:

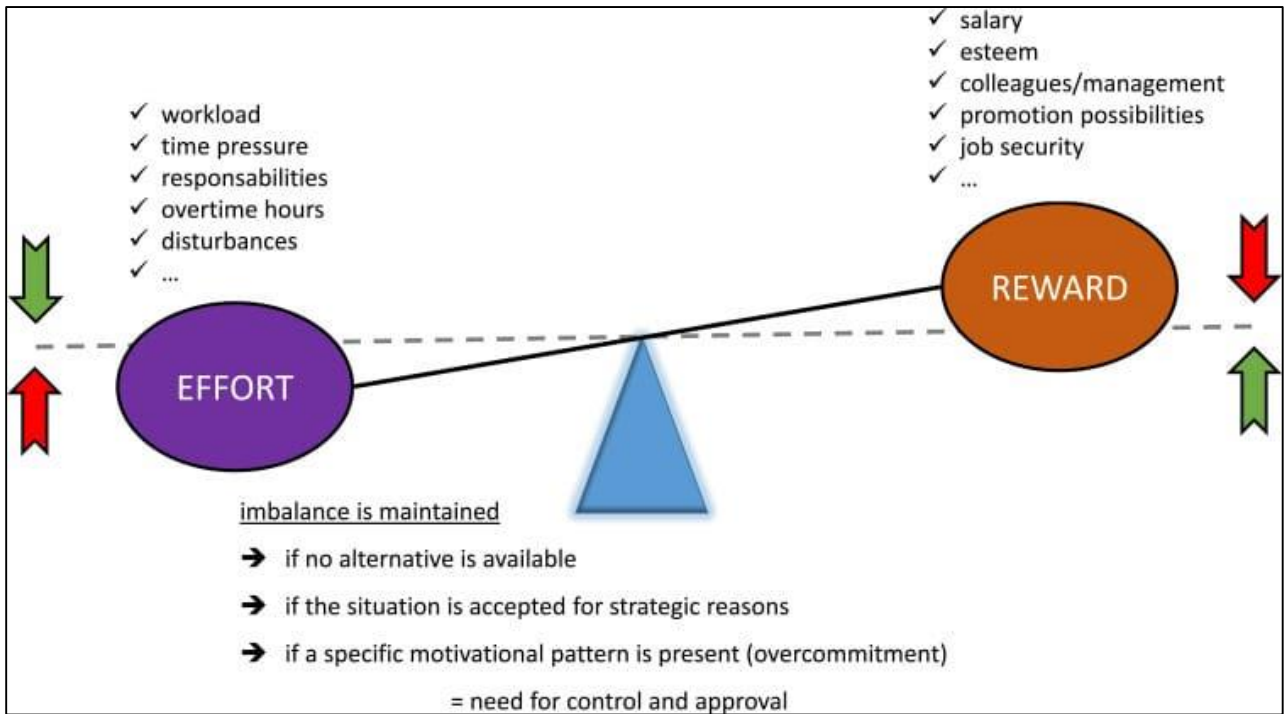

Fig. 4:

Among other professions where discipline, responsibility and workload is enormous for example in army, bureaucrats, students pursuing higher education, law firms and among business class people, the magnitude of burnout differs but it is invariably present. The reasons may be competition, workload, personal expectations and social image etc. Although, burnout is related to occupational stress, the attitude of person, their behavior and coping skills also matters a lot in dealing with the stress.

Who is an Exception…

It is highly prevalent among health care professionals, army professionals, researchers, banking and finance sector and teachers in some part of the world and as matter of fact, in any field.

Risk Factors in Health Care Professionals

Risk factors vary in nature, severity, and as per the kind of workplace. For instance, in health care settings, especially in India huge population, scarce health care workers, poor infrastructure, less incentives, frequent end-of-life events, risk of getting infected, a thankless attitude of patients and family and fear of being blamed for any mis-happenings have a crucial role in genesis of burnout syndrome.[16]

Individual risk factors

1. Younger age
2. Idealistic view for the self and world
3. Rigid or less flexible attitude
4. Financial issues
5. Physical health condition amounting to difficulty in doing hard work for longer periods
6. Poor self-esteem of individual
7. Maladaptive coping mechanism
8. Type A Personality traits
9. Unrealistically high expectations

Organizational risk factors

1. Heavy workload
2. Poor management
3. Conflicts with co-workers
4. Lack of control or input
5. Effort- reward imbalance
6. Favoritism and discrimination leading to partiality
7. Lack of proper communication
8. Lower pay scale as compared to work load and working conditions

Burnout in Current Pandemic State

Current pandemic and burnout syndrome in India

In today's context, when the whole world is facing immense crisis due to the current pandemic, this syndrome has been observed in almost all the frontline workers. The doctors, nurses, OT and Laboratory staff, hospital cleaning and maintenance staff, police personnel, security personnel, sanitation workers, retailers and vendors and in people from various streams those who have been doing their job in protecting the human race from this pandemic are adversely affected.

Work load has increased manifold, while the infrastructure remains compromised. Nationwide, initially there was lack of PPEs and basic safety materials like gloves and sanitizers. The nature of virus has also remained mysteriously unexplored for quite a long time and the patients who are infected were treated on trial error basis without proper treatment guidelines.

In the midst of all the uncertainties and risk of being infected and to prevent further transmission to the family members, patients, fellow doctors, nurses and other health care staff frontline workers have opted to remain in hospitals under tremendous stress.

It goes beyond saying that working for long hours, staying away from home, being exposed to false information across the world and potential threat of being mis-treated by patient's family members, there is increased risk of fatigue and burnout syndrome in healthcare workers during COVID 19 pandemic.[17]

Symptoms

The symptoms of burnout patients are usually multidimensional with several psychiatric, psychosomatic, somatic and social disorders. The most common symptoms are concentration difficulties, memory disturbances, lack of drive and personality change, in addition to chronic fatigue[18]. Severe disturbances like anxiety and depression, suicide, addictions (e.g. alcohol, sedatives) were also noted in few. Common somatic symptoms are headaches, gastro-intestinal disorders (irritable stomach, diarrhoea), or cardio-vascular disturbances such as tachycardia, arrhythmia, and hypertonia were noted. Symptoms in different stages of burnout are shown in the Fig. 5.

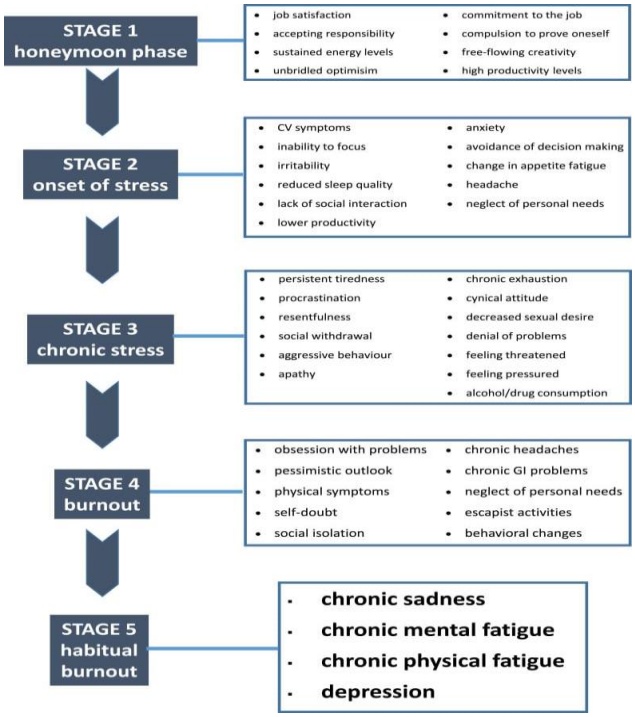

Fig. 5:

Consequences of Burnout Syndrome

Burnout syndrome in critical healthcare professionals may result in post-traumatic stress disorder (PTSD), alcohol abuse, and even suicidal ideation. Exhaustion is normal reaction to stress. Burnout may increase the risk of someone developing depression.[19] Burnout also results in decreased clinical effectiveness and poor work performance that may impact patient care.

Burnout in nurses is associated with low quality of care, lower patient satisfaction, increased number of medical errors, increased rates of health-care associated infections and higher 30-day mortality rates.[20]

There is a strong "dose-response" and "bidirectional" relationship between burnout scores and medical errors: errors lead to distress and distress leads to errors.

Assessment

American psychologist, Christina Maslach, developed an inventory to assess or rate burnout features in a person, known as Maslach Burnout Inventory (MBI-HS). HS stands for health care staff. The MBI-HS is a 22-item self-report questionnaire that consists of three independently scored dimensions (emotional exhaustion, depersonalization and a lack of personal accomplishment).[21]

Potential treatment or prevention for burnout syndrome

Evidence-based interventions to treat and prevent Burnout are currently not available in critical healthcare professionals. Interventions focused on both the individual and organization should be developed. Resilience is a psychological characteristic that enables an individual to adjust in a healthy way after a traumatic event. Resilience has been recognized as a mechanism to mitigate the symptoms of PTSD following trauma and treat Burnout. While there are innate or inherent qualities of resilience, some qualities of resilience can be learned and imbibed. Examples of resiliency techniques include: a) being optimistic, b) developing cognitive flexibility, c) establishing and maintaining a supportive social network, d) mindfulness training, and e) exercising. Organizational interventions should be aimed at sustaining a healthy work environment. The six standards include:

1. Having skilled communication
2. Appropriate staffing
3. Collaboration
4. Meaningful recognition
5. Effective decision-making
6. Authentic leadership

It is important that one should understand a few warning signs of burnout, so that he/ she can take appropriate steps to avoid serious consequences of it. As burnout syndrome significantly reduces the functioning of an individual, it impairs the "quality of Life". It also simultaneously reduces the productivity and outcome, which is essential for institutional optimal functioning. It is therefore a joint responsibility of employee and employer to look forward to actively mitigate Burnout.

Methods to mitigate Burnout Syndrome

1. Understand that there are ways to manage your work-related stressors that can put you at risk for burnout syndrome.
2. Engage the support of management, co-workers and friends that may help you cope with stress at work.
3. Take breaks from work. Go outside for a walk for fresh air. Exercise is known to enhance your energy and mood.
4. Understand and learn to enjoy the work and focus on your interests and passions.
5. Practice techniques such as reframing and optimism while dealing with stressful work.

Conclusion

High-quality controlled studies on burnout syndrome are lacking. In view of current lack of knowledge about what is called burnout, the term should not be used as medical diagnosis or as a basis for decisions regarding disability or other socioeconomic matters.[22]

Early recognition of symptoms, providing healthy work environment and teaching resilience techniques to mitigate stress will go a long way in protecting our professional colleagues from getting affected by BURNOUT SYNDOROME.

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The authors declare that there is no conflict of interest.

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Integration of yoga in clinical psychiatric practice

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The time has come to move towards a multi-disciplinary approach to mental health care. The department of Psychiatry, National Institute of Mental health and Neurosciences (NIMHANS), Bengaluru, India, has initiated such a multi-disciplinary approach to patient care. As a general norm, psychologists, social workers, psychiatric nurses and psychiatrists work together for the overall care of the patient. In addition to this, the role of Yoga is now being increasingly recognized and applied in mental health. Our honourable prime minister alluded to yoga in his speech at the United Nations in 2014 that made a significant impact. Moreover, the UN accorded recognition to Yoga and the world celebrates the International Day of Yoga on June 21 every year. This event has created a unifying effect on the world community and Yoga has gained popularity even among research scientists. In the last 10 years, the number of research articles on yoga have increased exponentially. A good number of scientific journals encourage publications on yoga. NIMHANS has set up a Department of Integrative Medicine. Yoga, Ayurveda and modern medicine services are available under the same roof. Illustrated below are some applications of integrating yoga in clinical psychiatry.

Need for Evidence-based Approach

Any therapeutic application in modern medicine demands evidence-based approach. Yoga interventions too demand evidence. Evidences in the form of double-blind randomised clinical trials have posed challenges in yoga or other traditional interventions.[1] There is no ideal placebo for Yoga. The main reason for using a placebo is to blind the subject from knowing what he/she received. Subjects doing yoga will know that he/she has performed yoga. Researchers have used physical exercise as a control,[2] but this will not serve the purpose of blinding as electronic media has popularised yoga and the public are aware of the yoga practices. An ideal control situation is far from sight and we may not get one at all.

The next requirement for generating evidence-based data is the objective measurement of outcome. This too poses a challenge in psychiatry. As an alternative to objective clinical measurements, one can examine the neurobiological effects of yoga. Correlation of these with the clinical outcome may partially exclude mere placebo effect. Although one could argue that placebo effects too can have some neurobiological consequences. However, the focus of the brief review is on the neurobiological markers of yoga in psychiatric illnesses. These findings could form the evidence-base for applying yoga in clinical practice. For this purpose, two diagnostic conditions have been examined; depression and schizophrenia. Depression is a highly prevalent condition and schizophrenia a highly burdensome one.

Yoga for Depression

Meta-analyses support the benefits of yoga in depression.[3,4] Comparators with yoga were standard treatment, relaxation, and aerobic exercises. Yoga conferred an advantage over these in depression. Effect of yoga given with or without anti-depressant drug was studied in NIMHANS. The study showed that yoga brings down the depression scores substantially even when given alone.[5] However, this was not a randomised clinical trial. Hence, 'comparison' has limitations. Yet, there was a substantial reduction in depression scores when yoga was the sole treatment. Yoga produced effects that 'correct' the existing neurobiological substrate of depression. For example, it is known that in depressed individuals the deeper brain structures, the amygdala or the cingulum are hyperactive, and corollary to that the frontal cortex has a lowered activity. Though one can debate the cause-effect relationship, these two observations have been consistent.

How does yoga confront this neurobiological effect?

Chanting of 'OM' is one of the commonly practiced components of yoga. When healthy subjects chanted 'OM', cingulum and the deeper limbic structures were deactivated.[6] Depressed individuals too can obtain this effect when they chant OM as part of yoga therapy. The biology of depression is hyperactivity of the limbic structures and yoga seems to act by countering this process by deactivating it. This provides one biological evidence that yoga should work in depression. Second is the role of Gamma-Aminobutyric Acid (GABA). GABA levels are lower in depression.[7] The group practising yoga, showed an increase in the levels of GABA as measured using Magnetic Resonance Spectroscopy.[8]

Another study used a physiological measure to examine the role of GABA in depression.[9] The measure used was the silence of the Electromyography (EMG), which can be demonstrated by Transcranial magnetic stimulation (TMS). A TMS pulse produces a spike in the EMG (electromyogram) of the corresponding (thumb) muscle of the individual. This EMG signal flattens after the stimulus pulse for a short period (50-100 msecs) and then the signal returns. The EMG silence, also called Cortical Silent Period (CSP), is a result of cortically-induced inhibitory effects

mediated by GABA. The length of this CSP reflects indirectly the GABA tone in the brain. The CSP gets longer, almost double the value, after yoga indicating that GABA tone had increased in these individuals.[9] What happens in depression? CSP was lower in depressed than in healthy subjects.[10] The depressed individuals received yoga or did walking on randomized allocation to these two groups. Both groups showed improvements in depression. The GABA tone (length of CSP) increased with the practice of yoga in depression. The 'correction' of the neurobiological deficit was more profound and demonstrable in the yoga group.[10]

Yet another study had subjects who received anti-depressants alone, yoga with anti-depressants or yoga alone. In both the yoga groups, cortisol levels dropped after treatment. With practice of yoga, 65% of patients had a decrease in blood cortisol levels.[11] Brain-Derived Neurotropic Factor (BDNF) is lower in Depression patients.[12] Effective treatments 'correct' this. There was a substantial elevation in the BDNF in both the yoga groups compared to their levels before the treatment. The decrease in cortisol was proportional to the increases in the levels of BDNF.[11] This suggests that sustained elevations of cortisol for longer periods may lead to a lowered level of BDNF, which may reflect on the brain structures of depressed individuals, as loss in grey matter.

Can yoga reduce this loss of grey matter? There are studies, which demonstrated that yoga increases the grey matter.[13] The grey matter size in the hippocampus of seven elderly subjects who practiced yoga was studied. After six months of regular yoga practice, a statistically significant increase in the grey matter volume in the hippocampus was observed.[1] This study was done with a small sample and without a control arm. Another study has shown a protective effect of yoga on the age-dependent loss of grey matter in the cortex.[15]

There are levels/stages of neurobiological pathology in depression. Starting from the decreased frontal activity, increased limbic activity leading to decrease of GABA, increase in the cortisol, then leading to decrease in the BDNF resulting in cortical thinning. 'Correction' of this deranged neurobiology by yoga at each of the levels described in depression is an objective evidence in support of yoga in depression.

Schizophrenia: Related Symptoms

Schizophrenia is another condition where there is sufficient evidence for the utility of yoga. Effect of yoga in schizophrenia individuals were demonstrated on chronically ill patients stabilised on anti-psychotic drugs who had not attained complete recovery. In these subjects, when yoga was added, negative symptoms reduced, but this did not happen in the exercise arm (active control) or in the wait-listed.[2]

A more recent study confirmed the beneficial effects of yoga.[16] Social cognition deficit in schizophrenia is a challenge to treatments and yoga improves social cognition. Clinical effects of yoga in schizophrenia have been consistent in all these studies. Results of two trials on Yoga in schizophrenia have influenced a clinical Guideline to recommend yoga as a need of treatment in stabilized schizophrenia individuals who are attending out-patient services. Interestingly there is a biological effect as well. Schizophrenia people have low levels of oxytocin, which is related to low social cognition. Nasal oxytocin is employed for improvement in social cognition. In a study, oxytocin levels were measured before and after 4 weeks of yoga.[17] Schizophrenia subjects obtained elevation in oxytocin levels (nearly three folds). The waitlisted individuals did not have such increase. Yoga can cause an autogenous elevation in the oxytocin. Yoga also has demonstrated efficacy in children with autism,[18] a condition that is also associated with social cognition deficits.

In chronic schizophrenia subjects, the Default Mode Network (DMN) has poor coherence, which perhaps explains some behaviours. Coherence improved in both posterior and anterior DMN after yoga intervention in such chronically ill schizophrenia subjects demonstrating that the network physiology gets better with yoga. Schizophrenia as the term suggests, breaks mental operations. Yoga is something that unites. The root word for yoga is *Yuj* that means to unite (*'samyoga yoga ityukto jivatmah paramatmanah'*). Yoga perhaps unites the disconnected behaviours by uniting the poorly connected brain networks. This is another objective evidence to support yoga for schizophrenia.

Effect of Yoga on ECT- induced Cognitive Deficits

A randomized clinical trial was conducted to examine the effects of yoga on cognitive deficits observed in patients receiving Electroconvulsive Therapy (ECT). Patients referred for ECT (n = 38) were randomly allocated to two groups: yoga or wait-list control. ECTs were given on alternate days over 3 or 4 weeks depending upon how long the physicians wanted them to receive ECTs. On the day of ECT, they would do yoga in the afternoon and on the other days they would in the morning. On each of the 6 days of the week, they had a session of yoga, all through the course of ECT. They were trained in yoga practice, which was tailored to help prevent cognitive decline[14] (i.e., practices, which we have been using for elderly individuals). Wait-listed patients were offered Yoga after ECT course. The two groups were comparable at baseline (before the start of ECTs in clinical and demographic variables). The Yoga group had significantly lower proportion of patients who had a higher percentage of decline in performance on the Controlled Oral Word Association Test (COWAT; survival analysis; log-rank chi-square = 6.44; $p<0.01$). There was no difference between the two groups in performance on other memory and non-memory tests. This study provides a preliminary evidence that yoga can protect the cognitive dysfunction effects of ECT. Thus, yoga can be recommended for practice in patients being treated with ECT.

Thus, there is neurobiological evidence supporting the role of yoga in depression and schizophrenia and of course empirical evidence today with a small research data, that

yoga could prevent the cognitive dysfunction in ECT individuals. At NIMHANS, studies have demonstrated effect of yoga in many other clinical conditions as well. Yoga can be successfully integrated with clinical psychiatry practice.

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Conflict of Interest
The authors declare that there is no conflict of interest.

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A comparative study of emotional intelligence in offenders with antisocial personality disorder and normal population at a tertiary care centre in Hyderabad, Telangana

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Abstract

Background: Emotional intelligence refers to ability to monitor own and other people's emotions. Lack of emotional intelligence can lead to many disturbances in one's life. A comparison of emotional intelligence in offenders with antisocial personality disorder and in normal population has been done in this study.

Aim: The aim is to study emotional intelligence in offenders with antisocial personality disorder and compare it with normal population at a tertiary care centre in Hyderabad.

Methodology: It is a cross-sectional and comparative study done at Institute of mental health, Hyderabad. Study sample includes 70 males, out of this 35 were offenders diagnosed with antisocial personality disorder and remaining 35 were from normal population. Tools used in this study are semi-structured intake pro-forma for sociodemographic details and criminal history, Goldberg's 12 item General health questionnaire, Mangal emotional intelligence inventory, International classification of diseases-10 criteria.

Results: The offenders group with antisocial personality disorder scored less on emotional intelligence test domains such as intrapersonal awareness, interpersonal awareness, intrapersonal management, interpersonal management and the total emotional intelligence score when compared to normal individuals and the difference between the two groups was found to be statistically significant. ($p = 0.000$)

Conclusion: The offenders with antisocial personality had significantly lower Emotional intelligence in comparison to the normal group and an inverse relation was observed between levels of emotional intelligence and number of crimes committed.

Keywords: Emotional intelligence, Antisocial personality disorder, Criminal offenses.

Introduction

The term "emotional intelligence" was first used in 1964 in a paper by Michael Beldoch and in 1966 by B. Leuner in his paper 'Emotional intelligence and emancipation'. However, emotional intelligence was fully known and given importance with the publication of Goleman's book: Emotional intelligence - Why it can matter more than IQ.

Emotional intelligence is defined as "the ability to monitor one's own and other people's emotions, to discriminate between different emotions and label them appropriately and to use emotional information to guide thinking and behaviour".[1]

The individuals with higher emotional intelligence are less likely to succumb to the negative impacts of stressors, while effectively help individuals deal with negative emotions and promote more positive emotions in its place. Deficits in emotional intelligence might lead to a number of adjustment issues. A person who cannot regulate his/her emotions well or understand the emotions of others may have difficulty in social situations. The individual may also have difficulty planning an emotionally fulfilling lifestyle.

Emotional intelligence is related to hostility and criminality.[2-5] Individuals with low emotional intelligence are more prone for risky behaviour and are less empathetic.[6] They cannot regulate their own emotions which will result in inappropriate behaviour and it is difficult to maintain high morals.[7]

Antisocial personality disorder has a deeply ingrained and rigid dysfunctional thought process that focuses on callous unconcern for the feelings of others and persistent attitude of irresponsibility and disregard for social norms, rules and obligations. They are not capable of maintaining enduring relationship though having no difficulty in establishing them. Antisocial personality disorder individuals tend to have low tolerance to frustration and a low threshold for discharge of aggression. They don't express any guilt for their actions and lack empathy for others. There is proneness to blame others and offer plausible rationalisations for their behaviour which has brought them in conflict with society.

Emotional intelligence is based on an individuals abilities to tackle with their emotions and other's emotions as well which is lacking in antisocial personality leading to more personal and interpersonal conflicts. According to Meloy, an individual who qualifies for a diagnosis of antisocial personality disorder most likely lacks the ability to experience emotions such as pleasure, gratitude, empathy, sympathy, remorse or any feelings that enables him/her to connect with others emotionally.[8]

Study done by Goleman on emotional intelligence was based on four domains i.e., (a) self-awareness - is awareness of one's own emotional state, recognising how one's behaviour will impact others and paying attention to know how others can influence one's own emotional state, (b) self-management involves getting along well with others, handling conflict effectively and using sensitivity to another person's feelings to manage interactions effectively, (c) social awareness is about caring what others are going

through and understanding about others in social networks, (d) relationship management includes the ability to get along well with others, make bonds and also managing conflict. Therefore emotional intelligence allows individuals to persist in situations in which they encounter barriers to success.[9,10]

Another study done by Harrod et al, in 2005 on adolescents for assessing emotional intelligence along with demographic characteristics like age, sex, household income etc. had showed significant difference of emotional intelligence score between males, females and also education of the individuals affected the emotional intelligence score. Emotional intelligence can be conceptualized as a person's "success-oriented traits."[11]

There are vast number of studies conducted on emotional intelligence of medical students, postgraduates and results showed that medical students, both men and women, had good level of emotional intelligence and it decreased with increase in total workload (p=0.013), having night duty hours and having emergency duty among the postgraduate students respectively.[12,13] Studies conducted on emotional intelligence in nurses and the results suggested that Emotional Intelligence is a useful tool for nurse leaders and contributes decisively to the achievement of effective management in healthcare.[14]

A study was done to assess the relationship between emotional intelligence and criminal behaviour has stated that offenders had low emotional intelligence and also it varied with the type of crime i.e., murderers had lowest emotional intelligence followed by drug dealers and thieves.[15] This link was also supported by other studies which were conducted in juvenile detainees.[16] There are in fact many studies done on evaluating emotional intelligence in criminals and all those studies have consistently shown that there are deficits in the emotional intelligence in criminals.[17-20] The relationships between trait psychopathy callousness, empathy, emotional intelligence, criminal thinking, and illegal behaviours was studied in a sample of male college students which revealed that participants who were more involved in criminal activities scored high on trait psychopathy and had low emotional intelligence.[21]

A study of relationship between emotional intelligence an criminal behaviour among convicted criminals when compared to normal subjects showed that criminals had lower emotional intelligence.[22]

There are various studies done on individuals with antisocial personality disorder world-wide to assess emotional intelligence. But same results cannot be generalised to Indian population as there will be a difference in the level of education, cultural aspects and also family background of the individuals. Which makes it important to consider these factors and understand how it can effect emotional intelligence of an individual in the Indian context.

However, there are no Indian studies which have assessed emotional intelligence in antisocial personality disorder and compared it with normal population. Hence the need for present study.

Aim

The aim is to study emotional intelligence in offenders with antisocial personality disorder and compare it with normal population at a tertiary care centre in Hyderabad.

Objectives

1. To assess emotional intelligence in individuals with antisocial personality disorder.
2. To assess emotional intelligence in normal individuals.
3. To compare emotional intelligence of offenders with antisocial personality disorder with normal individuals.

Materials and Methods

The study was conducted on a total of 70 individuals. Out of which 35 patients were offenders of various crimes admitted in forensic ward of Institute of mental health, Hyderabad and rest 35 individuals from the community were selected after age and gender matching was done. Study was conducted after ethics committee approval was obtained from Osmania medical college ethics committee.

Study design

Cross sectional and comparative study.

1. Study duration: 3 months. (Jan – March 2020)
2. Study done at: Forensic ward, Institute of mental health, Hyderabad and individuals from community.

Study subjects

1. Subjects diagnosed with Dissocial / Antisocial personality disorder as per International classification of diseases-10 criteria.
2. Normal subjects from the community, who are biologically not related to antisocial personality disorder group.

Inclusion criteria for antisocial personality disorder group

1. Male participants admitted in forensic ward.
2. Age – more than or equal to 18 years.
3. Education - 10^{th} standard or those who are able to read English/ Hindi.
4. Participants diagnosed with antisocial / dissocial personality disorder as per International classification of diseases-10 criteria.
5. Participants who are willing to give written informed consent.

Inclusion criteria for normal group

1. Male participants not accused for any crime.
2. Age- more than or equal to 18 years.
3. Education- 10^{th} standard or those who are able to read English / Hindi.
4. Participants who are willing to give written informed consent.

Exclusion criteria for both the groups

1. Participants scored more than or equal to 10 on General health questionnaire- 12 were excluded from the study.

2. Participants with psychiatric illness and meeting any diagnostic criteria from ICD-10 were excluded
3. Participants with any physical illness were excluded.
4. Participants who are not co-operative or not able to understand the questionnaire.

Sample size
70.

Study tools
Semi structured intake pro-forma consisting of sociodemographic and crime details, International classification of diseases-10 criteria, General health questionnaire-12, Mangal emotional intelligence inventory.

Methodology
Participants willing to take part in the study were selected and written informed consent was obtained from them.
Semi-structured interview was done to gather socio-demographic details, crime details and following scales were applied i.e. Goldberg's 12 item General health questionnaire and Mangal emotional intelligence inventory. Statistical analysis was done by using SPSS (statistical package for social sciences) software v26 and significant p value was taken as less than 0.05.

General health questionnaire -12
The General Health Questionnaire is a screening tool which was developed by Sir David Goldberg and Paul Williams to identify any psychiatric disorders. This instrument asks the participant if he/she has experienced any symptom or any behaviour. The instrument is considered as reliable. The 12-statements are to be rated on a four-point scale with a scoring weight of 0 to 3. Thus, the total score may range from 0 to 36. A higher score indicates increased levels of psychological distress and poor general health.[23]

Mangal emotional intelligence inventory
Emotional intelligence of the subjects was assessed by Dr. S. K. Mangal and Mrs. Shubhra Mangal's Mangal it has been designed for the measurement of their emotional intelligence in respect of four areas of emotional intelligence namely, intra personal awareness, inter personal awareness, intra personal management and inter personal management respectively. It has 100 items 25 each from the four areas to be answered in 'yes' or 'no'.[24]

Result
The study was conducted on a total sample of 70 individuals, with two groups of 35 individuals each. Participants of one group were taken from forensic ward who were accused for different kinds of crimes like thefts, robbery, rape, domestic violence, kidnapping, sex trafficking etc. and diagnosed with antisocial personality disorder as per ICD-10 and the other group had participants who were biologically not related to the first group and were selected from the community after age and gender matching.

Sociodemographic variables
(Table 1) like age, education, domicile, socio-economic status, occupation, marital status have revealed the following data. This data suggests that most of the offenders from antisocial group were unemployed whereas individuals of normal group were involved in semiskilled and skilled work. This variable (occupation) has shown statistically significant difference between the two groups (p= 0.027). Other variables like education has revealed that most of the offenders from antisocial group had received education up to 10th standard whereas most of the individuals from normal group had received education up to intermediate. However, this is not statistically significant (p = 0.407). Majority of the individuals were hailing from urban background in both the groups and belonged to low socio-economic status. When the variable marital status was compared, it revealed that divorcees were slightly higher in offenders with antisocial personality disorder. However, this is not statistically significant (p = 0.582). p value has been obtained by chi square test.

Table 1: (* = p value is significant)

Socio-demographic variable	ASPD group(n=35)	Normal group(n=35)	p value
Age (Mean ± SD in years)	26.028 ±4.348	25.257±4.231	0.676
Education			
1. 10th standard	24 (68.5%)	16 (45.7%)	
2. Intermediate	11 (31.5%)	17 (48.5%)	0.407
3. Degree	-	2 (5.7%)	
Occupation			
1. Unemployed	11 (31.4%)	3 (8.5%)	
2. Semiskilled	16 (45.7%)	17 (48.5%)	0.027*
3. Skilled	8 (22.8%)	15 (42.8%)	
4. Professional	-	-	
Domicile			
1. Rural	6 (17.1%)	5 (14.2%)	0.286
2. Urban	29 (82.8%)	30 ((85.7%)	
Marital status			
1. Single	13 (37.1%)	15 (42.8%)	

2. Married	11 (31.4%)	18 (51.4%)	0.582
3. Separated	5 (14.2%)	-	
4. Divorced	6 (17.1%)	2 (5.7%)	
Socio-economic status			
1. LSES	32 (91.4%)	25 (71.4%)	
2. MSES	3 (8.5%)	10 (28.5%)	0.265
3. USES	-	-	

Emotional intelligence score

The four sub domains of emotional intelligence were measured i.e. intrapersonal awareness, interpersonal awareness, interpersonal management and interpersonal management. These sub domains showed lower values in offenders of antisocial group when compared with that of normal group and also the cumulative emotional intelligence score was less in offenders group. The difference was statistically significant (p = 0.000).

Table 2: (* = p value is significant)

Variable	ASPD group	Normal group	p value
Intrapersonal awareness	8.371 ± 2.787	16.542 ± 2.84	0.000*
Interpersonal awareness	8.314 ± 2.948	17.171 ±3.01	0.000*
Intrapersonal management	8.628 ± 3.218	15.714 ± 3.277	0.000*
Interpersonal management	8.228 ± 3.662	15.371 ± 3.263	0.000*
Total EI score	33.5429 ± 11.810	63.800±11.442	0.000*

Relationship between total emotional intelligence score and number of crimes

The results have also shown significant relationship between total emotional intelligence score in antisocial personality disorder and number of crimes committed (p= 0.026) and Pearson correlation had showed a negative value, from this it can be assumed that criminals who committed more crimes had lower emotional intelligence. (Table 3).

Table 3:

		Total EI score	No. of crimes
Total EI score	Pearson Correlation	1	-.377*
	Sig. (2-tailed)		.026
	N	35	35
No. of crimes	Pearson Correlation	-.377*	1
	Sig. (2-tailed)	.026	
	N	35	35
*. Correlation is significant at the 0.05 level (2-tailed).			

The data obtained from criminal records show that majority of the individuals from antisocial group were undertrial prisoners and the mean of number of crimes committed was 3.514±2.345. (Table 4)

Table 4:

Variable	Result
Duration of stay in prison	
1. Less than a month	18
2. More than a month	11
3. More than a year	6
Status of trial	
1. Convicted prisoners	6
2. Under trial prisoners	28
3. Detenu prisoners	1
No. of crimes committed (Mean±SD)	3.514±2.345

Discussion

1. The results obtained from the socio-demographic variables (Table 1) shows that more number of unemployed individuals were found in the offenders from antisocial group whereas normal group had semi-skilled and skilled workers. Therefore it can be inferred that there was an impairment in occupational and social functioning among the offenders with antisocial personality disorder. Other variables did not show

statistically significant difference between both the groups.

2. In a study conducted by Nicholas Harrod et al[11] on exploration of emotional intelligence levels with demographic variables has also stated that there are no significant differences between EI scores and age, domicile and household income. Significant differences were found based upon EI scores for parents education i.e., adolescents with more educated parents showed higher levels of EI score. However, this was variable was not considered in the present study. So it can be inferred that only occupation was one variable which showed significant difference in this study and others variables did not show significant difference which was supported by previous studies.
3. From the results obtained it can be said that criminals with antisocial personality disorder had lower emotional intelligence that is a mean score of 33.5 ± 1.8 was recorded and this falls in the category of "Poor EI" whereas the normal population had higher score with a mean value of 63.8 ± 11.4 which falls in the category of "Good EI". The mean emotional intelligence score of both the groups was compared and the result was statistically significant with a p value of 0.000. In other studies which were conducted in criminals by Ahmed M megreya,[15] to assess emotional intelligence has shown that emotional intelligence was low in offenders when compared to non-offenders. In addition, emotional intelligence varied with type of offenses and this study done stated that general criminal thinking, criminal thinking styles negatively correlated with emotional intelligence. But a study conducted by Rebecca L Fix et al[21] had showed that individuals with higher psychopathy had only lower intrapersonal understanding of their emotions. There are many studies which supports the finding that offenders had low levels of emotional intelligence. When compared to the study by Neelu Sharma et al[22] which was conducted in criminals and normal population showed results in which criminals scored less on all the subdomains of emotional intelligence inventory when compared to the normal group. However, the aggregate score of emotional intelligence was 62±10 which was also less than normal group which was 74.07±8.44 but mean EI score of both the groups fall in the category of "Good EI". This study was done on criminals from a prison and personality traits of these criminals were not studied which could be one of the reason why the emotional intelligence score was good. However, criminals had scored less than normal population.

   Therefore it can be implicated that offenders with antisocial personality disorder have poor control over their emotions since they have low scores on intrapersonal awareness domain and they cannot appreciate others emotions as well due to low scores on interpersonal domain.

   As the offenders of antisocial group has also scored less on intrapersonal and interpersonal management it can be considered that because of these low scores there can be poor management of own emotions and also others emotions are poorly understood and managed resulting in aggression towards other's.

   Impulsivity, problem solving and social skills were some of the important domains of emotional intelligence test, which is impaired in antisocial group which explains the higher rates of impulsivity and also poor problem solving and poor social skills which can further add up to greater aggression.
4. The results have also shown significant relationship between total emotional intelligence score in antisocial personality disorder and number of crimes committed (p= 0.026) and Pearson correlation had showed a negative value, from this it can be assumed that criminals who committed more crimes had lower emotional intelligence. (Table 3) In a study conducted by Antonietta Curci et al to determine the role of emotional intelligence and predicting criminal behaviour has stated that coping style, aggressiveness, psychopathy, and ability emotional intelligence scores have a complex pattern of interrelationship and suggested that emotional intelligence is an important feature for implementing prevention programs of criminal behaviour.[25]
5. All the individuals from antisocial group were using different kinds of substances and the most common substances were alcohol and nicotine. A study conducted on alcohol dependent individuals by Prakash O et al in 2015, showed that they had low emotional intelligence and more personality disorders.

Conclusion

The offenders with antisocial personality had significantly lower Emotional intelligence (about all domains) in comparison to the normal group so there is difficulty in dealing with emotions which can affect the number of crimes being committed. Inverse relationship was obtained between number of crimes and emotional intelligence.

Strength of the Study

There are studies done on emotional intelligence in general population and few studies done on criminals but no studies done on antisocial personality disorder group. Therefore present study was done on antisocial personality disorder group.

Limitations

1. Smaller sample size was a drawback.
2. No females included in the study thus it cannot be generalised.

Implications

The offenders with antisocial personality disorder had less emotional intelligence when compared to the normal group which could be implied as one of the reasons for committing more crimes which was also supported by this study. As

there was an inverse relationship between emotional intelligence and number of crimes. Emotional intelligence enhancement programs can be done to improve the emotional intelligence among the prisoners. So that it will improve their quality of life and might also decrease the future crimes.

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Conflicts of Interest
None.

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Stress and substance use among undergraduate medical students in a Government medical college in Northern Karnataka

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Abstract

Context: Medical education is highly stressful and demanding as a career. Although, only the academically-minded youth in the society tend to be selected for medical education, the stressful academic environment can exert a negative effect on the psychological and physical well-being. There is growing concern about substance use/dependence among medical students. While medical students and doctors help patients resolve substance dependency, they are not immune to these temptations themselves. In addition to negative effects on the individual's physical and mental health, and on their families, substance abuse may threaten the ability to provide adequate patient care, and it may undermine the individual's role as a role model for healthy lifestyles.

Aims: To assess the stress and substance use and association among them among undergraduate medical students.

Settings and Design: It was a cross sectional study with second, third and final year undergraduate medical students of a government medical college in Northern Karnataka as subjects.

Materials and Methods: Basic demographical data was collected using a semi structured questionnaire, substance use was assessed using WHO ASSIST 3.0 scale, stress was assessed using Medical Student Stressor Scale (MSSQ).

Statistical analysis used: Data was compiled and appropriate statistical tests were used to analyse the data with the help of SPSS 20.

Results: Out of 450 second, third and final year undergraduate medical students, 403 participated in the study. The prevalence of substance use was about 34.7% with alcohol being the leading substance followed by marijuana. Few students reported inhalant/volatile substance use. 65% of the subjects reported high stress. Stress was almost equal in almost all domains.

Conclusions: Effective interventions have to be planned and implemented to reduce stress levels among medical students and to address the issue substance use by promoting healthy life style and coping skills.

Key Messages: There is association between stress and substance use among undergraduate medical students. Effective interventions have to be planned and implemented to reduce stress levels among medical students and to address the issue substance use by promoting healthy life style and coping skills.

Keywords: Medical students, Stress, Substance use.

Introduction

In a developing country like India, historically and culturally, medical profession is considered as one of the highly respected professions. It is a great dream for many of the pre university students to get into medical course.[1] But medical education is highly stressful and demanding as a career. Academic pressure producing stress in a student is not surprising, but this is not the only source of stress among them.[2] Many other factors namely the teaching style, inter and intrapersonal issues, drive and motivation related problems and social reasons may also contribute to the distressed state of the learner. In addition to stress, the students' social, emotional and physical as well as family problems may influence their learning ability and academic performance.[3] Previous studies have shown fairly high levels of distress, such as symptoms of depression[4,5] and suicide thoughts[6-7] among medical undergraduates. The potential negative effects of emotional distress on medical students include impairment of functioning in class-room performance, clinical practice and impaired mental health.[8-9] Higher levels of stress may have a negative impact on the students learning ability. Excessive stress may result in mental and physical problems and may diminish a student's sense of worth and might affect his/her academic achievement.[10,11]

Studies from west, that have examined coping strategies of medical students with the stresses of undergraduate medical education have generally identified, use of alcohol as a coping strategy[12-14] but some studies have reported the use of other substances such as tobacco and drugs.[15,16] Studies from developing countries like Pakistan, India, Thailand and Malaysia have reported stress among medical students and have underscored the role of academics as a source of stress.[1,17,18]

Stress may affect health by producing changes in behaviour and there is evidence that under high levels of stress, health-enhancing behaviour declines and health-threatening behaviour such as consumption of tobacco, alcohol, and other drugs may increase, so people are more likely to engage in behaviours that increase the risk of illness and injury.[19] There is considerable evidence from population-based and clinical studies supporting a positive association between psychosocial adversity, negative affect, and chronic distress and addiction vulnerability. Previous studies[20-22] have estimated a prevalence rate of substance abuse to be around 20-40 per cent among undergraduate medical students.

So, the present study assesses the prevalence of stress and substance use among undergraduate medical students and association between them.

Materials and Methods

A cross-sectional study was conducted among medical undergraduate students in a government medical college in Karnataka between June and July 2017 to assess the prevalence of stress and substance use among undergraduate medical students and association between them.

A total of 450 bachelor of medicine and bachelor of surgery (MBBS) students from second year to final year were studying in the institute. Institutional ethical committed permitted to conduct the study. All the undergraduate medical students from second year to final year MBBS were invited to participate in the study. The purpose of the study was explained to the participants, and a written informed consent was obtained during their theory class. The students who consented to participate in the study were included and were asked to complete a self-administered pre structured anonymous questionnaire consisting of the following sections: (a) sociodemographic profile (b) medical students' stressor questionnaire (MSSQ-40)[23] (c) World Health Organization Alcohol, Smoking and Substance Involvement Screening Test v 3.0. (WHO ASSIST v 3.0).[24] They were given 50 minutes to complete the questionnaire and asked to put the questionnaire in a ballot box kind of set up in a predesignated place in the class room and their roll numbers were noted separately for their class attendance as well as to note down the absentees. Those who were absent in the class were later invited to be a part of the study. Data was compiled and appropriate statistical tests were used to analyze the data with the help of SPSS 20.

MSSQ-40[23]

The MSSQ‑40 is a rating tool developed in a medical institute in Malaysia and validated to measure stress and its sources among medical students. It assesses six domains of sources of stress namely academic‑related stressors (ARS), intrapersonal and interpersonal‑related stressors (IRS), teaching and learning‑related stressors (TLRS), social‑related stressors (SRS), drive and desire related stressors (DRS) and group activities related stressors(GRS). Participants are asked to respond to each item along a five point Likert scale (0‑4), zero being no stress at all to four being severe stress. The scoring was done as per the instructions of the scale and the stress levels were graded as mild (<1), moderate (1.01–2), high (2.01–3), and severe (>3). The mean score obtained reflects on the overall stress status of the participant. Mild stress indicates a near absence of stress while moderate shows the ability of the student to manage well. High score shows that emotions maybe labile whereas severe stress indicates the difficulty in coping with day to day activities.

The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) v 3.0[24]

It was developed under the auspices of the World Health Organization (WHO) to be used in primary health care settings where hazardous and harmful substance use among clients may go undetected, or become worse. The ASSIST (version 3.0) is an eight item questionnaire designed to be administered by a health care professional to a client, and takes about five to ten minutes to administer. The ASSIST was designed to be culturally neutral and useable across a variety of cultures to screen for use of the following substances: tobacco products, alcohol, cannabis, cocaine, amphetamine-type stimulants, inhalants, sedatives and sleeping pills (benzodiazepines), hallucinogens and 'other' drugs.

The ASSIST determines a risk score for each substance. It obtains information from clients about lifetime use of substances, and use of substances and associated problems over the last three months. Scores in the mid-range on the ASSIST are likely to indicate hazardous or harmful substance use ('moderate risk') and higher scores are likely to indicate substance dependence ('high risk').

Results

Out of 450 students, 403 responded with response rate being 89.5%. As seen in Table 1, among the respondents, 225 (55.8%) were males and 178 (44.2%) were females. 147 (36.5%) students were studying in second year, 131 (32.5%) were in third year and 125 (31%) in final year MBBS. 320 (79.4%) were Hindu, 49(12.2%) were Muslims, 27(6.7%) were Christians. 328(81.4%) stayed in hostel, 52 (12.9%) stayed at home, 12 (3%) stayed with their relatives and 11 (2.7%) stayed as paying guests.

In the study, on MSSQ, scores of more than 1.01 were considered as having stress. 246 (61.1%) students, had collective score of >1.01 signifying stress among majority. As seen in table 2, among various stress domains, stress was high in academic related (78.4%), interpersonal and intrapersonal (70%) and group activity related (68.7%) domains. Drive and desire related domain had least stress (39.5%).

There was significant association ($p < 0.05$) between the year of MBBS and stress. As the year of study progressed, the stress also increased, especially in the academic related domain.

While assessing substance use, 140 (34.7%) students reported use of either one of tobacco, alcohol, cannabis, cocaine, inhalants, sedatives, hallucinogens, and opioids at least once in their lifetime. Prevalence of substance use increased as the year of MBBS progressed.(Table 3)

Among the respondents, 49 (12.6%) were at moderate to high risk for tobacco use, 40 (9.9%) for alcohol, 29 (7.2%) for cannabis, 14 (3.4%) for inhalants, and 11 (2.6%) for sedatives. (Table 4)

The association of academic related stress was significant ($p<0.05$) with tobacco, alcohol, cannabis, inhalants and sedatives use (Table 5). Similarly, inter and intrapersonal, teaching and social related stress was significantly associated with tobacco, alcohol, cannabis and inhalants use. Drive and desire and group activity related stress was significantly associated with tobacco, alcohol and cannabis use.

There was no significant association of stress with gender, religion and place of stay. There was also no significant association between substance use and gender, religion and place of stay.

Table 1: Socio-demographical details

		N (%)
Gender	Male	225 (55.84%)
	Female	178 (44.16%)
Year of MBBS	Second	147 (36.48%)
	Third	131 (32.5%)
	Final	125 (31.01%)
Present stay	Hostel	328 (81.4%)
	Home	52 (12.9%)
	Relative	12 (3%)
	Paying guest	11 (2.7%)
Age in years	18-20	182 (45.2%)
	21-23	214 (53.1%)
	>24	7 (1.7%)
Religion	Hindu	320 (79.4%)
	Muslim	49 (12.2%)
	Christian	27 (6.7%)
	Jain	4 (1%)
	Others	3 (0.7%)

Table 2: MSSQ stress domains and their respective scores

MSSQ* Stress Domains	**MSSQ Scores from 1.01-4.00**	
	N (403)	**%**
Academic Related	316	78.4%
Interpersonal and Intrapersonal related	282	70%
Teaching and Learning related	222	56.1%
Social Related	222	56.1%
Drive and desire related	159	39.5%
Group Activity related	277	68.7%

* Medical Student stressor questionnaire

Table 3: Relationship of substance use with gender and year of study

	Substance Use		P
	Yes	No	
Male	87 (38.66%)	138 (61.34%)	>0.05
Female	53 (29.78%)	125 (70.22%)	
2nd Year	40 (27.21%)	107 (72.79%)	
3rd Year	43 (32.82%)	88 (67.18%)	
Final Year	57 (45.6%)	68 (54.4%)	<0.05
	140 (34.73%)	263 (65.27%)	

Table 4: Risk of various substances of use

Substance	**Low Risk**		**Moderate Risk**		**High Risk**	
	Count	**%**	**Count**	**%**	**Count**	**%**
Tobacco	352	87.3%	42	10.4%	9	2.2%
Alcohol	363	90.1%	33	8.2%	7	1.7%
Cannabis	374	92.8%	26	6.5%	3	0.7%
Cocaine	403	100.0%	0	0.0%	0	0.0%
Amphetamine	402	99.8%	1	0.2%	0	0.0%
Inhalants	389	96.5%	13	3.2%	1	0.2%
Sedatives	392	97.3%	10	2.5%	1	0.2%
Hallucinogens	402	99.8%	1	0.2%	0	0.0%
Opioids	401	99.5%	2	0.5%	0	0.0%
Others	403	100.0%	0	0.0%	0	0.0%

Table 5: Association of various domains of stress with substance use

Risk		Academic Related								P value
		Mild Stress		Moderate Stress		Severe Stress		Very Severe Stress		
		Count	%	Count	%	Count	%	Count	%	
Tobacco	Low	84	23.9%	160	45.5%	92	26.1%	16	4.5%	<0.001*
	Moderate	1	2.4%	6	14.3%	19	45.2%	16	38.1%	
	High	2	22.2%	2	22.2%	2	22.2%	3	33.3%	
Alcohol	Low	86	23.7%	163	44.9%	98	27.0%	16	4.4%	<0.001*
	Moderate	1	3.0%	4	12.1%	13	39.4%	15	45.5%	
	High	0	0.0%	1	14.3%	2	28.6%	4	57.1%	
Cannabis	Low	85	22.7%	165	44.1%	103	27.5%	21	5.6%	<0.001*
	Moderate	2	7.7%	3	11.5%	9	34.6%	12	46.2%	
	High	0	0.0%	0	0.0%	1	33.3%	2	66.7%	
Inhalants	Low	86	22.1%	165	42.4%	107	27.5%	31	8.0%	0.043*
	Moderate	1	7.7%	3	23.1%	5	38.5%	4	30.8%	
	High	0	0.0%	0	0.0%	1	100.0%	0	0.0%	
Sedatives	Low	87	22.2%	164	41.8%	111	28.3%	30	7.7%	<0.001*
	Moderate	0	0.0%	4	40.0%	1	10.0%	5	50.0%	
	High	0	0.0%	0	0.0%	1	100.0%	0	0.0%	

Discussion

The prevalence of stress among undergraduate medical students in our study was 61.1%, which is almost similar to the prevalence reported by previous studies.[25-29] However, Studies investigating stress among Indian medical students report wide variations in the prevalence of stress (37.3–97%).[30-34] This observed inconsistency can be explained by demographic differences in the samples, different academic years of the students studied, varying case definitions, and no uniformity in measuring tools.[31] The possible reasons for the variability in the levels of stress could be due to certain differences in the curricula, teaching facilities, qualification and experience of the instructors, and the levels of care given to the students. Academic counselling is not a common practice in the present setup because of a large number of medical students and limited number of the faculties that may contribute to high prevalence of stress.[31]

Our subjects experienced more stress in academic related domain. In most of the previous studies, students reported similar academic related stress.[31] Few of the issues in which they were stressed were - tests /exams, self-expectation, heavy workload, not enough skills, full of competition, having difficulty in understanding the content, getting poor marks, lack of time for revision, large syllabus to learn and unjustified grading system. Medical students are overloaded with a tremendous amount of information. The excessive amount of stress in medical training predisposes students to have difficulties in solving problems and reduced concentration and finally develop depression.[26] Furthermore, stress among medical students can break the mental stability, impaired judgments, and absenteeism from class lesson. In effect, all those things compromise academic achievement of students.[25]

As the students progressed to higher classes in medical course the amount stress increased. This can be attributed to high volume of study material, expectation and increased competition.[21] A high prevalence of stress among medical students is a cause of concern as it may impair behaviour of students, diminish learning, and ultimately affect patient care after their graduation.[35,36]

In our study, 34.7% of the subjects had used either one of tobacco, alcohol, cannabis, cocaine, inhalants, sedatives, hallucinogens, and opioids at least once in their lifetime. The result was the in the range of prevalence of substance use seen among undergraduate medical students in the previous studies.[37-40]

There was significant association between year of study and substance use. As the year of study advanced, prevalence of substance use also increased. This may be attributed to increased syllabus, clinical postings and exams and increased self- expectation.[40]

Most common substance of use was alcohol followed by tobacco and cannabis. In few other studies tobacco was the most common substance of use.[40,41]

Interesting finding in our study was moderate to high risk of inhalant use in 3.4% of the subjects. In India Inhalant use is reported among school students and children belonging to lower socioeconomic strata.[42] But studies among medical undergraduate students don't mention inhalant abuse. But few studies from Greece and Brazil[43,44] do mention about inhalant abuse with prevalence being 3.1%-31%. As inhalants are not contraband and easily available, the usage of this substance is worrisome. This finding needs to be further investigated.

There was also no significant association between substance use and gender, religion and place of stay. It needs more structured and large scale studies to assess the relation between these factors.

Though our study did not assess the reasons for substance us, according to previous studies socialization, feeling of having grown up and relieving from tensions[41] to relieve of the stress and curiosity, academic stress, peer pressure, failure in love matters also accounted for initiation of substance use among majority of abusers.[40-43]

The association of academic related stress was significant ($p<0.05$) with tobacco, alcohol, cannabis, inhalants and sedatives use. Similarly, inter and intrapersonal, teaching and social related stress was significantly associated with tobacco, alcohol, cannabis and inhalant use. Drive and desire and group activity related stress was significantly associated with tobacco, alcohol and cannabis use. These findings were similar to findings in the previous studies.[20-22] The previous studies haven't studied in detail about each substance of use and each domain of stress. But the specific association between type of stress and certain substances abuse needs to be investigated further.

Conclusion

Stress levels are very high among undergraduate medical students. Substance use is one of the coping mechanisms among them due to high level of stress. So, healthy management of stress is essential among undergraduate medical students.

Limitations

1. First year MBBS students were not involved in the study and all the participants belonged to one institute. So the results cannot be generalized.
2. The involved self-administered questionnaire so possibility of information bias cannot be ruled out.
3. This was a cross-sectional study, so cause-effect relationships could not be established. Some students might have over- or under-reported their stress and stressful factors.
4. Prospective studies are necessary to study the associations between occurrence of stressors and incidence of stress.

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None.

Conflicts of Interest

None.

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Prevalence of alcohol dependence syndrome cases with and without delirium during the first phase of lockdown in Telangana

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Abstract
Objectives: To determine the prevalence, association of socio-demographic factors, medical comorbidities with delirium in alcohol dependence syndrome individuals hospitalized during the lockdown period.
Design: 667 alcohol-dependent patients attending the institute of mental health, Hyderabad during the 1st phase of lockdown were studied retrospectively with the help of hospital records.
Results: Out of 667 samples 266 individuals presented with delirium. There is no significance of sociodemographic factors on delirium except sex. There is a positive correlation between severity of dependence (r=0.26, p=0.000), number of drinks (r=0.271, p=0.000) per day, duration of intake of substance (r=0.137, p=0.000) with delirium. Individuals with medical comorbidity hypertension, both hypertension and diabetes have presented a greater number of delirium cases.
Conclusion: Current lockdown scenario is the first time we had faced. We found a greater prevalence of delirium in alcohol dependence cases which is a threat to the health care system. Hence further research in risk factors involving delirium presentation is needed. Stringent rules to control alcohol dependence to avoid a similar situation in the future and effective management of health care facilities are needed.

Keywords: Alcohol dependence syndrome, Prevalence, Delirium.

Introduction
Alcohol use is a common condition that has been associated with severe impairments in social functioning and medical problems. About 20% of the population had been noted to exhibit alcohol abuse during their lifespan.[1] Alcohol dependence syndrome is one of the most common and most researched illnesses among psychiatric disorders. In India, epidemiological studies have shown a prevalence rate of 68% for alcoholism.[2] In Telangana, it is about 53.9%.[3] More than 50% of those with a history of alcohol abuse can exhibit alcohol withdrawal symptoms, on discontinuing or decreasing their alcohol use. However, only a few (3% to 5%) exhibits symptoms of severe alcohol withdrawal with delirium.[1] As a preventive measure to avoid an exponential increase in the number of COVID-19 cases, Govt. of India announced a complete lockdown from March, 23, 2020, which in turn led to forced abstinence for alcohol dependent individuals. This led to the surge of alcohol withdrawal cases. Hence, this study was carried out with cases reported during this lockdown period. In a state like Telangana, where there is high alcohol consumption, an insight into the matter of alcohol dependence cases, and its complications during abstinence gives directions to handle situations like this in the future.

Aim of the study
To estimate the prevalence of alcohol dependence syndrome cases with and without delirium during the first phase of lockdown in Telangana.

Objectives of the Study
1. To study the association between socio-demographic parameters and alcohol dependence syndrome with or without delirium
2. To study the association between medical comorbidities and alcohol dependence syndrome with or without delirium.
3. To study the association between the severity of alcohol dependence and delirium.

Materials and Methods
The study was conducted at the Institute of Mental Health (IMH), Erragadda, Hyderabad by convenient sampling which was a retrospective study. All patients who visited during the first phase of lockdown i.e from March 23, 2020, to April 15th, 2020 were enrolled in the study after they fulfill the inclusion and exclusion criteria.

Inclusion criteria
1. Male, Female.
2. All patients in the age group of 18 – 60 years, meeting diagnostic criteria of ICD-10[4] for alcohol dependence syndrome (ADS)

Exclusion criteria
1. Co-morbid psychiatric disorders: schizophrenia, delusional disorder, anxiety disorders, and mood disorders including dysthymia.
2. Non-alcoholic delirium

Study procedure
Before conducting the study permission from administrative authorities of IMH and the institutional ethical committee

was obtained. It is a hospital record analysis study. Patients with a clinical diagnosis of alcohol dependence syndrome and its spectrum (withdrawal) as per ICD-10 and meeting the inclusion and exclusion criteria were included in the study. Socio-demographic details, history, general physical examination, and mental status examination was recorded on a semi-structured proforma designed for the study. The severity of alcohol dependence by Severity of Alcohol Dependence Questionnaire (SADQ) and severity of alcohol withdrawal by CIWA as per entered in the case sheets was noted. Our study was a retrospective study, gathering information from case sheets of our hospital. In our hospital, generally all ADS cases getting admitted into deaddiction, APCU wards will be assessed by a committee of PG, senior resident, assistant prof., & professor. Same procedure is followed for OP cases. In wards also pts. will be seen daily by PG, assistant prof. Severity of withdrawal symptoms will be assessed by using CIWA on daily basis by PG. Once the pt. got resolved from delirium about 7-10 days after admission, severity of ADS will be assessed, using SADQ by PG, supervised by assistant prof. The same will be documented in case sheets.

This data was compiled and analyzed by SPSS version 22, Chi-square, Student t-test, Spearman correlation. $P < 0.05$ was accepted as statistically significant.

SADQ has a high degree of test -retest reliability and a very good evidence of construct & concurrent validity[5], consists of 20 questions to measure the severity of alcohol dependence. Each item is scored on a 4-point scale giving a scoring range of 0 to 60. It is divided into 5 sections like physical withdrawal symptoms, affective withdrawal symptoms, craving and relief drinking, typical daily consumption and reinstatement of dependence after period of abstinence. Maximum score: 60; scores greater than 30 correlates with clinicians' ratings of "severe alcohol dependence." Test-retest reliability of 0.85. Factor analysis yields single main factor accounting for 53 percent of variance. SADQ had been used in previous Indian studies.[6-9]

Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-Ar)[10] is the most objective and best-validated tool to assess the severity of alcohol withdrawal, which consists of 10 items. Zero to 7 points are assigned to each item, except for last item, which is assigned 0-4 points, with a total possible score of 67.

Results

A total sample of 667 Alcohol Dependence Syndrome individuals meeting both inclusion and exclusion criteria were taken into the study and values are noted in table.01.

Table 1: Prevalence of delirium

	Total Sample (667)	**Prevalence**
Delirium	266	39.88%
Without delirium	401	60.12%

Table 2: The Severity of alcohol dependence (SADQ) scores of the sample.

	SADQ		**t value**	**p-value**
	Mean	SD	10.315	0.000*
Males (481)	21.53	3.935		
Females (186)	18.20	3.193		

The mean score of SADQ (denoting the severity of alcohol dependence) was found to be 21.53 for males and 18.20 for females which were statistically significant.

Table 3: Showing sociodemographic factors of the study sample.

Associated factors	**With delirium**	**Without delirium**	**Chi-square**	**P-value**
Age				
21-30	20	20		
31-40	64	95	1.97	0.57
41-50	104	160		
51-60	78	126		
Sex				
Male (481)	216	265	18.17	0.000*
Female (186)	50	136		
Domicile				
Rural (89)	36	53	0.01	0.90
Urban (578)	230	348		
Religion				
Hindu (552)	225	327	1.04	0.59
Muslim (112)	40	72		
Others (3)	01	02		

Marital status Unmarried (33) Married (577) Divorced (07) Widowed (50)	 12 236 03 15	 21 341 04 35	2.48	0.47
Socioeconomic status Lower (341) Upper lower (264) Lower middle (56) Upper middle (05) Upper (00)	 141 103 21 01 00	 200 161 35 05 00	1.87	0.6

There is no association between socio-demographic parameters (except sex) and alcohol dependence with and without delirium.

Table 4: Showing medical comorbidities of the study sample.

Medical comorbidities	**Delirium**		**Chi-square**	**P-value**
	Present	Absent		
Nil	208	293	9.99	0.01*
Hypertension	42	62		
Diabetes	4	27		
Both	12	19		

Among medical comorbidities it was found that for person with hypertension or both hypertension and diabetes, delirium was more evident than diabetes or without any comorbidity, which was statistically significant.

Table 5: Association between severity of alcohol dependence with delirium.

	Delirium	
SADQ	R-value	0.260**
	P-value	0.000*

R = spearman correlation coefficient.

It was found that as the severity of dependence (SADQ) increases the probability of delirium increases, which was statistically significant. Most of the samples clustered at higher values of SADQ in those presented with delirium.

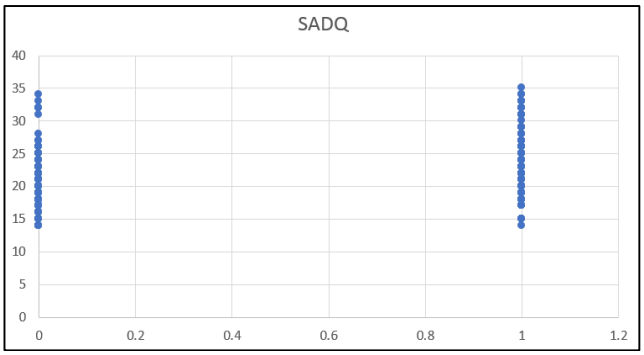

Fig. 1: Association between SADQ and delirium.

Table 6: Association between the type of substance with delirium.

Substance	**Delirium**		**Chi-square**	**P-value**
	Present	Absent		
Whiskey-W (cheap liquor)	22	30	9.33	**0.02***
Toddy-T	92	185		
Both(W+T)	91	105		
W/T + Nicotine	61	81		

It was found that the prevalence of delirium was more in individuals consuming both whiskey + toddy (46.4%), whiskey/toddy with nicotine (42.9), whiskey alone (42.3%) compared to toddy alone (33.2%).

Table 7: Correlation between duration of intake of substance with delirium.

	Delirium	
Duration of intake	R-value	0.137**
	p-value	0.000*

As the duration of intake of substance increasing the prevalence of delirium was found to be increasing which was statistically significant.

Table 8: Correlation between the number of drinks/day with delirium.

	Delirium	
Number of drinks/day	R-value	0.271**
	p-value	0.000*

It was found a positive correlation between the number of drinks per day and the prevalence of delirium.

Table 9: Association between the history of seizures, withdrawal seizures, delirium with current delirium state.

History	**Delirium**		**Chi-square**	**P-value**
	Present	Absent		
Nil	191	332	13.952	**0.007 ***
Seizures)	8	11		
Withdrawal seizure)	60	55		
Both	4	1		
Withdrawal delirium	3	2		

It was found that individuals with a history of seizures or withdrawal seizures or delirium have more propensity for withdrawal delirium compared to individuals without any significant history.

Discussion

Delirium Tremens (DT) falls in the most severe spectrum of alcohol withdrawal, which could potentially result in death unless managed promptly and adequately. In our study, the prevalence of delirium in alcohol dependent individuals were found to be 39.88%, which was pretty high compared to previous studies.[1,11-13] It might be due to lockdown, only severe cases were able to come to the hospital whereas mild cases didn't attend the hospital. Similar to our finding, a study in Germany (2000), shown the proportion of patients with DT among patients with Alcohol Dependence Syndrome as 13.5%.[12] When compared, the impact of sociodemographic factors between with and without delirium, no significant differences.[14-16] found, except gender. Among total of 667 patients, 216 males and 50 females presented with delirium. The difference in terms of delirium presentation is statistically significant (P = 0.000*). Our study findings are in agreement with other studies (Kraemer et al. and Wetterling et al.)[17,18] that there is no relation between age and development of delirium in alcohol dependent individuals. We found that individuals with medical co-morbidity hypertension (42 of 104) and both hypertension & diabetes (12 of 31) have presented a greater number of delirium cases compared to diabetes alone (4 of 31), without any comorbidity (208 of 503), which was statistically significant (p =0.01*) (X^2 = 9.9). Earlier one study found elevated blood pressure as a risk factor for delirium.[18] (Ferguson et al (1996)). We found a positive correlation between the severity of alcohol dependence and withdrawal delirium (R = 0.260 and P = 0.000*) - implies that as the severity of dependence increases, the probability of delirium presentation also increases, which is in line with a study by Sarkar et al[14] finding of continuous drinking as a risk factor for delirium. Most of the samples clustered at higher values of SADQ in those presented with delirium. Individuals with prior history of seizures (8 of 19) or alcohol withdrawal (67 of 125) were associated with an increased risk of delirium compared to individuals without any past history (191 of 523) which was statistically significant (X^2 = 13.95 and P = 0.007*). Our findings support the results of prior studies that have found an increased risk of delirium in patients with a prior history of alcohol withdrawal seizures or delirium[12,20-22] (Schuckit et. al, David A et. al, Goodson et. al, Wright T et. al). A similar finding was found in a study by Sarkar et al (X^2=21.6, P=0.001). Individuals consuming both toddy and whiskey (cheap liquor) (46%) has presented more in number with delirium than individuals taking either toddy or whiskey with nicotine (42%) or whiskey (cheap liquor) alone (42%) or only toddy (38%) with X^2 = 9.33 and P = 0.02*. Even though consumption of toddy is more in our state, delirium presentation is more in individuals consuming cheap liquor because it contains more amount of ethanol and trace alcohol (methanol) ultimately leading to complications with abstinence. A positive correlation was found between the duration of intake of substance in years and the number of drinks per day with delirium, using Spearman correlation coefficient [(R=0.137 and P = 0.000) (R=0.271 and P = 0.000) respectively]. This finding was

against T. Wetterling et al. in which they found no correlation.[18] A study by Sarkar et al found a positive correlation between the number of drinks per day with delirium (t=-2.99, P-0.004).[14]

Limitations

The current study is a retrospective study, gathering information from case sheets presented to the hospital setting and period of observation was during the lockdown, which was the first time that we had ever faced. Hence there might be a chance of information bias, recall bias. As the sample taken in the study are of severe cases presented to the hospital, we can't attribute the prevalence of delirium to the general population.

Conclusion

DT is a fatal complication of severe alcohol dependence syndrome. Due to its high mortality and various associated complications, prevention and identification of the condition are needed. In the present study, a history of withdrawal (complicated or uncomplicated), type of substance, duration of substance intake and the number of drinks per day, and the presence of medical comorbidities emerged as significant clinical predictors of delirium. Recognizing individuals with a history of alcohol abuse help to prevent the progression of withdrawal symptoms. Our findings provide insight into the prevalence of delirium in alcohol dependence syndrome and its health burden in our state.

Recommendations

Further, a detailed follow-up study helps in better understanding the risk factors for the development of delirium in alcohol dependence syndrome cases. There is a need for stringent policies to curb excessive alcohol consumption in our state. The US Preventative Services Task Force recommends screening individuals age 18 years or older involved with risky drinking and engaging these individuals with behavior therapy and interventions to decrease alcohol misuse. Strengthening the primary health care system, availability of deaddiction centers at all district levels will help to tackle a situation like this in the future.

Conflict of Interest

None.

Source of Funding

None.

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Tobacco use and its clinical correlates among Psychiatric in-patients at a tertiary care Psychiatric Hospital: A cross sectional study

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Abstract

Background: Prevalence of tobacco use is variable among psychiatric illness across the world. Tobacco consumption may predispose or worsen the psychiatric illnesses.

Aims: To study the prevalence of tobacco use among psychiatric in-patients and to study the association between various sociodemographic variables and clinical variables with tobacco use.

Materials and Methods: A cross sectional study was conducted among psychiatric in -patients (n=200) at a tertiary care psychiatric hospital. Consecutive sampling technique was applied. A semi-structured proforma was applied to capture the socio-demographic and clinical details of the participants. The Fagerstrom Test for Nicotine Dependence (FTND) was applied to assess for the tobacco dependence**.**

Results: Prevalence of current tobacco use among the study population was 39.5%. Among the psychiatric illness, prevalence of tobacco use is significantly higher in substance use disorders when compared with mood disorders ($\chi2$=7.757, p=0.005) and schizophrenia and other psychotic disorders ($\chi2$=24.093, p<0.01). Tobacco use is significantly associated with male gender ($\chi2$=20.820, p<0.01), employment ($\chi2$=7.860, p= 0.005) and marital status ($\chi2$=7.930, p= 0.019) among psychiatric patients.

Conclusion: Prevalence of tobacco use was found to be high among psychiatric population. There is a need to focus on the adequate management of tobacco use along with primary psychiatric conditions.

Keywords: Nicotine, Psychiatric in-patients, Smoking, Tobacco.

Introduction

Tobacco use disorder is one of the major health concern. It is anticipated that, there will be 1.1 billion smokers all over the world, by 2025.[1] Smoking was the second leading risk factor for deaths and was responsible for 7.10 million deaths in 2017 globally.[2] In India, about 28.6% of the population consume tobacco in any form, 10.7% uses tobacco in the form of smoking and 21.4% uses smokeless form of tobacco.[3] It was found that smoking was significantly higher in psychiatric outpatients when compared to general population,[4] and psychiatric patients have a higher chances of being a current smoker and have lower cessation rates.[5] Heavy smoking and severe nicotine dependence were frequently seen in smokers with schizophrenia when compared to general population.[6] Persons with nicotine dependence had higher rates of major depression and anxiety disorders.[7] Severity of mental illness is also affected by tobacco consumption as it was found that schizophrenia patients who consumed tobacco had significantly higher positive symptom scores compared to non-users.[8] Tobacco-related medical conditions comprised approximately 53% of total deaths in the schizophrenia, 48% in the bipolar, and 50% in the depression cohorts.[9] Patients with tobacco dependence also tended to use other substances like khat and alcohol which have their independent impact on medication adherence and prognosis of the mental illness.[10] In patients with bipolar disorder, tobacco smoking, both independently and in the presence of other substance use, was significantly associated with recurrent suicide attempts.[11] Thus, tobacco consumption may predispose or worsen the psychiatric illnesses.

A cross sectional study among 270 psychiatric patients found that 35.6% were smokers, of whom, 53.2% presented with high or very high nicotine dependence. 33.3% of smokers were schizophrenic patients.[12] The greater difficulty to quit smoking was positively associated with a higher frequency of previous psychiatric hospitalizations (Fisher =0.042). Another study assessed patterns of smoking and nicotine dependence among 816 psychiatric inpatients and found that 70% of participants were smokers. It was found that depressed patients smoked less than schizophrenic patients (P=0.04). Smoking was significantly related with advanced age (P<0.001), male sexuality (P<0.001), hookah consumption (P<0.001), and depression.[13] In a cross-sectional study done among 305 male and 117 female mental health service users, 18.5% of study population were dependent on tobacco. Amongst people with tobacco dependence, 57.7, 29.5 and 12.8% had moderate, high and very high level of tobacco dependence respectively.[10] In a study done among 998 psychiatric inpatients, in India, 36% of the study population were found to be tobacco users, of which 65% were dependent on nicotine. Significant predictors of tobacco use were male gender, older age, lower levels of education, diagnosis of bipolar disorder, and substance use. However, there was no significant association found between nicotine dependence and specific psychiatric diagnosis.[14] In a cross-sectional study done among 303 psychiatric in-patients at a tertiary care hospital in North India, 39.9% were found to be tobacco users. Comorbid other substance use disorders and psychiatric comorbidities were higher in tobacco users than nonusers of tobacco. Comorbid alcohol use (38%) and cannabis use (34%) were also higher

in the tobacco user group.[15] Thus, tobacco use among psychiatric patients is variable across the study setting and regions. Further, sociocultural and economic factors could influence smoking behavior especially in a developing country like India. In countries like India smoking is often prohibited by familial, cultural and religious practices. Thus, many factors influence the use of tobacco among psychiatric patients. There is a vast literature from western countries about tobacco use in psychiatric patients. However, in India, literature pertaining to use of tobacco in psychiatric patients is limited. Therefore, we aimed to study prevalence of tobacco use among psychiatric in-patients. We further aimed to study the association between various sociodemographic and clinical variables with tobacco use.

Materials and Methods

The study was conducted at tertiary care psychiatric hospital, Institute of Mental Health, Hyderabad. Study was conducted after obtaining ethics committee approval from Osmania medical college ethics committee. The study was performed on the psychiatric in-patients who got admitted in open wards between 1st June 2020 to 1st august 2020. Consecutive sampling technique was used to select the study sample. Patients having reliable informant, able to give informed consent, all psychiatric diagnosis like schizophrenia, bipolar affective disorders, substance use disorders, neurotic disorders and others of both male and female genders were included in the study. Non consenting patients and those not having reliable informant were excluded from the study. A total of 206 patients who were admitted in open wards were approached to participate in the study and they were explained in detail about the objectives, purpose and procedure of the study in language they can understand. 200 patients gave their consent for the study. All the demographic details of patient's such as Name, Age, Sex, Education level, Occupation, Marital status, Residency were captured using a demographic proforma. All the relevant clinical details about tobacco use were taken. Details about primary psychiatric diagnosis were taken from the medical records. For the purpose of this study, "Current tobacco use" was empirically defined as the usage of tobacco with in the past 30 days before the assessment. Clinically, the diagnosis of tobacco dependence was established as per International Classification of Disorders- 10th edition. The Fagerstrom Test for Nicotine Dependence (FTND) was applied for severity of dependence, which is a brief six item instrument to assesses severity of nicotine dependence available for both smoke and smokeless forms of tobacco. Based on the form of tobacco used by the subject, FTND was applied for smokers and FTND-ST was applied for smokeless tobacco users.[16,17]

Descriptive statistics have been used to tabulate socio-demographic variables of the study sample. Descriptive statistics were also used to tabulate the frequencies of clinical characteristics of patients and tobacco related characteristics of all psychiatric patients. Chi-square test ($\chi 2$ tests) was used to look for association of sociodemographic & clinical variables with presence / absence of tobacco use. Level of statistical significance was kept at $p < 0.05$ and all the tests were two tailed. SPSS version 26 was used for data analysis.

Results

A total of 206 patients were screened for the study and six patients did not give consent for participation in the study (97% response rate).

Sociodemographic characteristics of the patients

As shown in Table 1, 63% of the study population were males, 37% were females. Mean age of the study participants was 33.09 (S.D 9.96) years. 43.5% were married and 41% were unmarried. 27% of them had attended secondary education, whereas 17% were not formerly educated. Most of them are from nuclear family (73.5%) and Hindu religion (80.5%). More than half of the participants are unemployed (54%) and from urban background (60%).

Table 1: Sociodemographic characteristics of patients

Variable	Frequency (Percentage) / Mean (SD)
Gender	
Male	126 (63)
Female	74 (37)
Age	33.09 + 9.963
Marital status	
Married	87 (43.5)
Unmarried	82 (41)
Others	31 (15.5)
Educational status	
Primary	34 (17)
Secondary	54 (27)
Intermediate	28 (14)
Graduation	49 (24.5)
Illiterate	35 (17.5)
Religion	
Hindu	161 (80.5)
Muslim	33 (16.5)
Christian	6 (3)
Occupational status	
Unemployed	108 (54)
Employed	92 (46)
Residency	
Rural	80 (40)
Urban	120 (60)
Family	
Nuclear	147 (73.5)
Extended nuclear	15 (7.5)
Joint	38 (19)

Clinical characteristics of the patients

As shown in table 2, the most common psychiatric diagnosis was schizophrenia and other psychotic disorders (41.5%) followed by mood disorders (26.5%) and substance use disorders (18.5%). Neurotic, stress – related and somatoform disorders constituted 6% of cases. Other psychiatric disorders constituted 7.5% of the cases. More than half of the (67%)

patients had history of suicide attempt and 54% were previously hospitalized. 43.5% of patients are using one of the other psychoactive substance (irrespective of tobacco).

Table 2: Clinical characteristics of patients

Variable	Frequency (Percentage)
Schizophrenia and other psychotic disorders	83 (41.5)
Mood disorders	53 (26.5)
Mental and behavioural disorders due to use of substance	37 (18.5)
Neurotic, stress- related and somatoform disorders	12 (6)
Others	15 (7.5)
History of suicidal attempt	
Yes	66 (33)
No	134 (67)
History of prior hospitalization	
Yes	92 (46)
No	108 (54)
Use of other psychoactive substance	
Yes	87 (43.5%)
No	113 (56.5%)

Tobacco related characteristics of all psychiatric patients

Tobacco related characteristics of the participants is shown in table 3. Current prevalence of tobacco use among the psychiatric in-patients was 39.5% (79). Among the tobacco users 65 (82.2%) were male and 14 (17.7%) were female. More than one fourth (27.8%) of tobacco users, initiated tobacco when they were less than 18 years. Of all tobacco users (n=79), 37 were using tobacco only in smoking form of, 26 were using only smokeless form of tobacco, 16 were using tobacco in both forms. Total Number of smokers in our sample is 53, it includes both the persons using tobacco only in the form smoking and those using both forms of tobacco. Similarly, number of patients using smokeless form of tobacco is 42. More than three fourth of the tobacco users were using tobacco in dependence pattern (n= 70, 88%). Four percent (n=8) of patients had a previous history of tobacco dependence and are currently maintaining abstinence.

Prevalence of tobacco use is high in substance use disorders (n=28, 75.6%), followed by mood disorders (n=24, 45.2%) and schizophrenia and other psychotic disorders (n=23, 27.7%). Prevalence of tobacco use in neurotic, stress- related and somatoform disorders and other psychiatric disorders is less than five percent (1.2% & 3.7% respectively).

Table 3: Tobacco related characteristics of all psychiatric patients

Variable	Frequency (Percentage)
Tobacco use (Current)	79 (39.5)
Only smoking form	37 (18.5)
Only smokeless form	26 (13)
Both forms	16 (8)
None	121 (60.5)
Nicotine dependence (current)	70 (88.6)
Previous history of tobacco use	17 (8.5)
Dependence pattern	8 (4)
Age of initiation of tobacco use	
<18 years	22 (27.8)
>18 years	57 (72.1)
Prevalence of tobacco use among various psychiatric illness	**79**
Schizophrenia and other psychotic disorders	23 (29.11%)
Mood disorders	24 (30.3%)
Mental and behavioural disorders due to use of substance	28 (35.44%)
Neurotic, stress- related and somatoform disorders	1 (1.2%)
Others	3 (3.7%)
Gender	
Male	65 (82.27%)
Female	14 (17.72%)

Understanding about tobacco use among tobacco users with psychiatric illness

As shown in the table 4, most common reason for initiation of tobacco use was being coaxed by friends in both smoking (58.4%) and smokeless (52.3%) tobacco users. More than three fourth of the tobacco smokers (88.6%) perceive that tobacco products are psychoactive substances however, 45% of smokers believe that they are not addicted to smoking. Similarly, two third of smokeless tobacco users (66.6%) perceive that tobacco products are psychoactive substances however, 47.6% of smokeless tobacco users believe that they are not addicted to smoking.

Table 4: Understanding about tobacco use among tobacco users with psychiatric illness

Understanding about tobacco use	Smoking tobacco users (n=53, Exclusively smokers and those who smoke and chew tobacco)	Smokeless tobacco users (n=42, Exclusively smokeless tobacco user and those who chew tobacco and smoke)
Reason for initiation of tobacco use		
Enjoyment	7 (13.20%)	5 (11.9%)
Fashionable	2 (3.77%)	1 (2.38%)
Friends	31 (58.49%)	22 (52.38%)
Experiment	7 (13.20%)	9 (21.42%)
Stress	5 (9.43%)	5 (11.9%)

Do you think tobacco products are psychoactive substances		
Yes	47 (88.67%)	28 (66.66%)
No	3 (5.66%)	11 (26.19%)
Don't know	2 (3.77%)	3 (7.14%)
Do you think you are addicted to smoking tobacco		
Yes	27 (50.94%)	22 (52.38%)
No	24 (45.28%)	20 (47.61%)
Don't know	2 (3.77%)	0

Association of sociodemographic and clinical variables with presence / absence of tobacco use:
As shown in table 5, Tobacco use is significantly higher in males compared to female psychiatric patients ($p<0.01$) and more in married when compared to unmarried, divorced or separated ($p=0.019$). Similarly, tobacco use is higher in employed compared to unemployed psychiatric patients ($p=0.005$). However, no significant association was found between tobacco use and other socio-demographic variables like religion, type of family, residency ($p>0.05$).

Among the psychiatric illnesses, tobacco use is significantly more common in substance use disorders as compared to schizophrenia and other psychotic disorders ($\chi2=24.093$, $p<0.01$) and mood disorders ($\chi2=7.757$, $p=0.005$). Similarly, tobacco use is significantly more common in mood disorders as compared to schizophrenia and other psychotic disorders ($\chi2=4.416$, $p=0.036$). Further, tobacco use is significantly more common in those with other substance use as a comorbid condition, compared to those without other comorbid substance use (60.393, $p<0.01$). However, no significant association was found between tobacco use and suicidal attempt and previous history of hospitalization ($p>0.05$).

Table 5: Association of sociodemographic & clinical variables with presence / absence of tobacco use

Variable	Tobacco use Present (n=79)	Tobacco use Absent (n=121)	Chi square (df), p
Gender			
Male	65 (82.27%)	61 (50.41%)	20.820 (1), <0.01*
Female	14 (17.72%)	60 (49.58%)	
Marital status			
Married	40 (50.63%)	47 (38.84%)	
Unmarried	23 (29.11%)	59 (48.76%)	7.930 (2), 0.19
Others	16 (20.25%)	15 (2.39%)	
Religion			
Hindu	60 (75.94%)	97 (80.16%)	1.867 (2), 0.393
Muslim	13 (16.45%)	20 (16.52%)	
Christian	6 (7.5%)	4 (3.30%)	
Type of family			
Nuclear	52 (65.82%)	95 (78.51%)	4.669 (2), 0.097
Extended Nuclear	9 (11.39%)	6 (4.9%)	
Joint	18 (22.78%)	20 (16.52%)	
Residency			
Rural	32 (40.50%)	48 (39.6%)	0.014 (1), 0.906
Urban	47 (59.49%)	73 (60.33%)	
Occupational status			
Unemployed	33 (41.77%)	75 (61.8%)	
Employed	46 (58.22%)	46 (38.01%)	7.860 (1), 0.005*
Suicidal attempt			
Yes	30 (37.77%)	36 (29.75%)	1.462 (1), 0.227
No	49 (62.02%)	85 (70.24%)	
Previous hospitalization			
Yes	35 (44.30%)	57 (47.10%)	0.151 (1), 0.697
No	44 (55.69%)	64 (52.89%)	
Any other psychoactive substance use			
Yes	61 (77.21%)	26 (21.48%)	60.393 (1), <0.01*
No	18 (22.78%)	95 (78.51%)	

Substance use disorders vs Schizophrenia and other psychotic disorders	28 (35.4) 23 (29.1)	9 (11.3) 60 (75.9)	24.093 (1), <0.01*
Substance use disorders vs Mood disorders	28 (35.4 24 (30.3)	9 (11.3) 28 (35.4)	7.757 (1), 0.005*
Schizophrenia and other psychotic disorders vs Mood disorders	23 (29.1) 24 (30.3)	60 (75.9) 28 (35.4)	4.416 (1), 0.036*

*p<0.05 = Significant

Discussion

In the current study, the prevalence of tobacco use in psychiatric inpatients was found to be 39.5%, and the results are in line with other Indian studies,[14] but contrasts with western studies where the prevalence is nearly 50-80%.[5,18] This difference in prevalence rates might be due to the differences in cultural values, income, distribution and availability of tobacco across various countries.[18] The prevalence of tobacco use in psychiatric patients is high when compared to general population (28.5%),[3] and is likely to be associated with high morbidity and mortality because of tobacco related medical conditions than in general population.[19]

In the current study, tobacco use is significantly more common in substance use disorders when compared to schizophrenia and other psychotic disorders ($\chi2=24.093$, $p<0.01$) and mood disorders ($\chi2=7.757$, $p=0.005$). Further, in our study we found significant association between tobacco use and comorbid other substance use ($p<0.01$). A recent study also found that tobacco use is associated with other comorbid substance use,[15] and specifically, smoking tobacco is prevalent in 77% to 88% of patients with substance use problems.[20,21] Nicotine in tobacco and primary psychoactive component in other drugs of abuse share a common mechanism, where, release of neurotransmitters, especially dopamine in mesolimbic pathway, is thought to be involved in developing dependence.[22] Mental illness like alcohol dependence and tobacco dependence share some common genetic factors leading to cooccurrence of alcohol and nicotine use.[23] Thus, tobacco use often coexist with other substances and is regarded as a gateway drug for other substances.[24] It has significant clinical considerations as comorbid tobacco use in substance use disorders may hamper the success of quitting the other substance use.[25] Nicotine in tobacco products, is known to induce cytochrome P450, particularly CYP1A2, which is involved in metabolism of psychotropic medications, thus hampering treatment of primary psychiatric illness.[26,27] Further, management of tobacco use is usually neglected as the patients primarily present for the management of other psychiatric conditions. Hence there is a need to focus on the adequate management of tobacco use as well along with primary psychiatric conditions.

In our study, tobacco use was significantly more in mood disorders when compared to schizophrenia and other psychotic disorders, in line with previous study,[14] however, most of the studies have established strong association between smoking and schizophrenia.[18] It can be explained that in the current study, only psychiatric inpatients were taken and majority of the mood disorder patients in the current study were diagnosed to have mania with psychotic symptoms. Nicotine has an inhibitory effect on monoamine oxidase inhibitor leading to increased levels of other neurotransmitters thus enhancing the mood of the patient.[28,29] Moreover, disinhibition and substance taking behavior are more common in manic episodes and smoking has been related to the presence of psychotic symptoms in mood disorders.[30] Hence in the current study, tobacco use might have been more in mood disorders compared to schizophrenia and other psychotic disorders. However, replicative studies are needed to confirm the above finding.

Other significant finding of the current study was that in our study, tobacco use was significantly associated with gender and males are more likely to use tobacco compared to females ($\chi2=20.820$, $p<0.01$), in line with previous study.[13,14] It can be explained as in India, tobacco use among females is still socially unacceptable in many cultures.[31] In the current study, tobacco use was found to be significantly associated with employment status as tobacco users were more likely to be employed compared to unemployed ($p=0.005$) and our finding is in line with previous study.[15] A possible explanation could be economic independence associated with employment attributing for the easier procurement of tobacco.[32]

Strength of the study were that consecutive sampling technique was employed which probably yields unbiased selection of sample. All the psychiatric illness were included in the current study, hence estimating the prevalence in a heterogenous psychiatric population unlike in most studies which assessed in selected psychiatric population. We assessed both forms of tobacco use (smokeless and smoking) for estimating the overall tobacco burden in psychiatric population. However, this study has several limitations that should be noted. Only admitted psychiatric patients were included. Therefore, results may not be applicable to outpatients. The study was conducted in a tertiary care psychiatric hospital which has mental hospital setting, where usually patients with severe mental illness get admitted as in our study, hence results cannot be generalized to the general hospital setting. We did not compare the tobacco use in general population which might help in better understanding about the burden of tobacco use in this population. Substance

use details were taken from patients and informants only and no confirmatory tests were conducted.

Conclusion

Prevalence of tobacco use is high among psychiatric patients. Specifically, tobacco use is more in substance use disorders followed by mood disorders and Schizophrenia and other psychotic disorders. Given the harmful consequences and its interference in treatment of the primary psychiatric conditions, there is a need to focus on the adequate management of tobacco use along with primary psychiatric conditions.

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Conflict of Interest

None.

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None.

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A study of pathway of care among persons with mental illness attending a tertiary care centre in Hyderabad

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Abstract

Background: Persons with mental illness usually do not visit the mental health facility first. Instead they approach faith healers and other alternative systems. Only when the condition becomes worse, do they seek psychiatrist consultation leading to delay in treatment.

Materials and Methods: A cross sectional study was conducted to understand the pathway of care adopted by persons with mental illness and its relationship with sociodemographic variables. In our study population, 250 patients visiting a psychiatric outpatient department of a tertiary care hospital were interviewed on a semi structured questionnaire for various services contacted by them for their mental health problems. Data was analysed using SPSS version 22.

Results: The initial study sample included 258 patients, out of which 8 were excluded because of exclusion criteria. The final study sample was 250. The mean age of sample was 35.92yrs. There were 137 males and 113 females. Our study sample comprised of 66.8% aged between 20 to 40 years, 54.8% male, 57.2% were married, 67.6% were unemployed and 75.2% earn below 10000 rupees. In illness variables, 32.0% of study subjects had duration of illness 1 to 5 years, 36.8% subjects were having schizophrenia followed by mood disorders [22.8%]. 28.4% of study sample (71 out of 250) did not consult psychiatrist at all before coming to tertiary care centre out of which 8.8% consulted faith healers. Rest 71.66% of study sample consulted general practitioners, general physicians, neurologists and ayurvedic unani homeopathic doctors. Reasons given by patient's family members for not consulting psychiatrists were ignorance about illness, financial problems, belief in superstitions, lack of availability of mental health services and stigma towards mental illness.

Socio demographic factors significantly associated with delay in first consultation to psychiatrist were found to be 20 – 40yrs of age (p=0.000), female gender (0.031), illiterate (0.025), unemployment(0.001), income <10,000 (0.014), distance >100kms (0.019) and diagnosis of schizophrenia(0.000).

Conclusion: Patients with mental illness seek help from nonpsychiatric physicians, faith healers, traditional, alternative systems due to lack of awareness about treatment services, long distances and due to fear of stigma about illness. It is important to sensitize general practitioners about early identification, management and referral of psychiatric disorders.

Keywords: Pathway of care, Pathway of care in people with mental illness.

Introduction

Mental illnesses are commonly associated with higher disability and burden than many physical illnesses.[1] People who have not previously received mental health services may be particularly reluctant to recognize their need for treatment and establish treatment contact.[2] Mental illnesses are often accompanied by a lack of awareness and social stigma, which leads patients and their families to seek alternative service providers.[3] Other reasons like non availability of mental health professionals, superstitions associated with mental disorders, unwillingness or inability of families to care for persons with mental illness, care giver education also adds to delay in psychiatric consultation. The pathway a person with psychiatric problem adopts to reach appropriate treatment/ care is termed as pathway of care.[1] Even in developed countries like USA, Canada, Italy, Netherlands one third of people with mental disorder don't seek treatment from mental health services, rather approach general practitioners, general physicians and are referred to psychiatrists afterwards.[4] In India mental health resources are very low compared with high income countries. The facilities for psychiatric treatment are generally available in general hospital psychiatric units, mental hospitals. Apart from this patients may consult non psychiatric physicians, general practitioners, lay counsellors, local religious leaders and traditional faith healers.[3-7]

Different studies on pathway of care have quoted different reasons for seeking help from different resources like, easy accessibility, belief in the system or particular healer and good reputation. They were spending highest amount on non psychiatric physician, lowest expenditure on alternative system of practitioners. Patients who received mood, anxiety disorder were less likely to make first contact with psychiatrist, more likely to visit primary care. Those who were separated or widowed or divorced were significantly associated with longer duration of untreated illness.[1,3,8]

An understanding of the way people with mental illnesses seek care for their illnesses is recognized as important for planning mental health services, organizational training and referral from other sources of health and social care services.[9] So, this study was conducted to study the delay in duration and reasons, different places where help was taken before attending first psychiatric consultation among patients attending psychiatric OPD of tertiary care hospital.

Aims

1. To study the delay in duration for first psychiatric consultation.

2. To study the reasons for delay in first psychiatric consultation
3. To study if there is any association between socio demographic factors and illness variables and delay in first consultation

Materials and Methods

Institutional Ethics committee approval was obtained before conducting the study from Osmania medical college. Permission of authorities were taken before collecting the sample. Data was collected from patients attending the psychiatric OPD of a tertiary care hospital in Hyderabad (Institute of mental health, Erragadda, Hyderabad), Telangana state from October 1st to November 30th 2019. Simple random sampling technique was used to select patients. Sample was collected in the out patient department on every Tuesday of the week. Those who are attending the main OPD for the first time, consented for the study and accompanied by a reliable informant were enrolled into the study. Those patients who are excited, did not consent for the study, unable to recollect the delay in duration and reasons for delay and had unreliable informants are excluded from our study. The purpose and objectives of study were explained to patients and their informant in a language which they can understand. Written informed consent was obtained from both patient and attendant before carrying out the study. Consented subjects were entered into the semi structured intake proforma consisting of sociodemographic data, diagnoses as per ICD -10 diagnostic criteria, duration of delay, reasons for delay in first psychiatric consultation were entered. All the data was statistically analysed accordingly to interpret aims and objectives using SPSS version 22. Descriptive statistics were used to tabulate the sociodemographic characteristics and frequencies of clinical characteristics. Chi square test was used to look for association of sociodemographic variables and clinical variables. Level of statistical significance was kept at < 0.05.

Results

The initial study sample included 258 patients, out of which 8 were excluded because of exclusion criteria. The final study sample was 250. The mean age of sample was 35.92yrs. There were 137 males and 113 females.

Table 1: Showing socio demographic data of study population

Category		N=250	Percentage
Age	<20 years	6	2.4%
	20 to 40 years	167	66.8%
	40 to 60 years	63	25.2%
	>60 years	14	5.6%
Gender	Male	137	54.8%
	Female	113	45.2%
Education	Illiterate	81	32.4%
	Literate	169	67.6%
Employment	Employed	85	34.2%
	Unemployed	163	65.2%
Income	<10,000	188	75.2%
	10000 to 20000	52	20.8%
	>20000	10	4.0%
Marital Status	Married	143	57.2%
	Unmarried	77	30.8%
	Widowed	13	5.2%
	Separated	17	6.8%

Our study sample comprised of 66.8% aged between 20 to 40 years, 54.8% male, 57.2% were married, 67.6% were unemployed and 75.2% earn below 10000 rupees.

Table 2: Showing illness variables

Duration of Illness	<1 month	25	10%
	1month to 1 year	64	25.6%
	1 year to 5 years	80	32.0%
	5 years to 10 years	52	20.8%
	>10 years	29	11.6%
Diagnosis	Organic	22	8.8%
	Substance	49	19.6%
	Schizophrenia	92	36.8%
	Mood disorders	57	22.8%

	Neurotic	11	4.4%
	Others	19	7.6%
First Contact	Faith healer	88	35.2%
	GP	65	26%
	Neurologist	8	3.2%
	Private psychiatrist	40	16%
	Tertiary care centre(IMH)	49	19.6%

In illness variables, 32.0% of study subjects had duration of illness 1 to 5 year, 36.8% subjects were having schizophrenia followed by mood disorders [22.8%]. 35.2% of study population consulted faith healers for their problems at first instance. 54.8% before coming to our tertiary care centre (IMH) have not seen any doctors.

Table 3: Showing association between first contact and socio demographic factors

		Faith healer	**General practitioners**	**Neurologist**	**Private psychiatrist**	**Tertiary care centre(IMH)**	**Chi square**	**P value**
Age	<20 years	1	2	0	1	2	45.060	0.000
	20 to 40 years	66	38	4	30	29		
	40 to 60 years	19	18	0	9	17		
	>60 years	2	7	4	0	1		
Gender	Male	37	38	5	23	34	10.06	0.031
	Female	51	27	3	17	15		
Literacy	Illiterate	64	34	4	31	35	11.156	0.025
	literate	24	31	4	9	14		
Employment	Employed	20	20	1	17	27	18.529	0.001
	unemployed	68	45	7	21	22		
Income	<10000	68	54	8	21	37	19.23	0.014
	10 to 20000	16	8	0	16	12		
	>20000	4	3	0	3	0		

Table 4: Showing association between illness variables and first contact

		Faith healer	**General practitioners**	**Neurologist**	**Private psychiatrists**	**Tertiary care centre(IMH)**	**Chi square**	**P value**
Distance	<100kms	42	34	2	23	36	11.82	0.019
	>100kms	46	31	6	17	13		
Diagnosis	Organic	0	15	5	0	2	15.72	0.000
	Substance	2	10	1	6	30		
	Schizophrenia	55	15	0	16	6		
	Mood disorders	27	13	1	11	5		
	Neurotic	1	5	0	3	2		
	Others	3	7	1	4	4		

Our study found that 75% of study subjects aged between 20 to 40yrs(p=0.000), 45.1% are female gender (p=0.031), 36.1% low income subjects(p=0.014), 72.72% illiterates (p=0.025), 77.27% unemployed (p=0.001), 52.27% of subjects staying at a distance more than 100km(p=0.019), and 62.5% carrying diagnosis of schizophrenia (p=0.000), were significantly associated with delay in first contact with psychiatrist.

Table 5: showing relationship between socio demographic variables and contact before tertiary care centre(IMH)

		None	**Faith healer**	**Doctors**	**Combined**	**Chi square**	**P value**
Gender	Male	34	8	63	32	9.95	0.019
	Female	15	14	46	38		
	Total	49	22	109	70		
Distance	<100 kms	36	15	57	29	13.81	0.0003
	>100kms	13	7	52	41		
	Total	49	22	109	70		
employment	Employed	27	3	37	18	15.87	0.001
	Unemployed	22	19	70	52		
	Total	49	22	107	70		
Diagnosis	Organic	2	0	19	1	116.67	0.000
	Substance	30	1	16	2		
	Schizophrenia	6	12	29	45		

	Mood disorders	5	8	25	19		
	Neurotic	2	1	8	0		
	Others	4	0	12	3		

From above table 5 there were 71 subjects out of 250 who didn't seek psychiatrist at all before coming to a tertiary care centre (IMH). They have not consulted any medical professional (28.4%), out of which 8.8% consulted only faith healers and 43.6% approached general practitioners including, AYUSH specialists, neurologists, physicians, rest of the sample consisting mixed approaches to different service providers.

Table 6: Showing reasons given by informants for not consulting psychiatrists

S. No	Reasons	Percentage
1	Ignorance	24
2	Financial problems	34
3	Superstitions, black magic	18
4	Neighbors advice	8
5	Distance from hospital	6
6	Stigma	10

Above table shows the reasons given by informants for not consulting psychiatrist as a first resort. Multiple reasons were given like financial limitations (34%), ignorance (24%), superstitions (18%) and others.

Table 7: Showing who suggested our hospital

S.No	Who suggested tertiary care centre	Percentage
1.	Relatives	39%
2.	Friends	18%
3.	Neighbors	26%
4.	Self	11%
5.	General practitioners/ faith healers/ others	6%

Above table shows the responses given by informants of our study subjects regarding various means by which they came to know about a tertiary care centre.

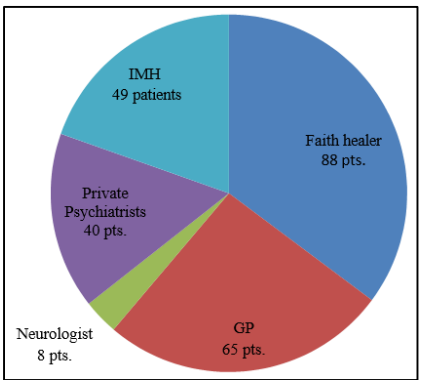

Fig. 1: Showing proportion of patients with whom they made their first contact for their mental illness

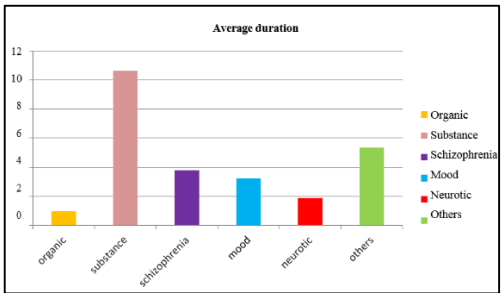

Fig. 2: showing average duration of illness of various disease spectrums at which patients presented to our hospital

Discussion

The initial study sample was 258, out of them 8 were excluded as 4 patients had difficulty recalling, 3 patients did not have reliable informant and one patient refused to give consent for participation in our study. In our study, more than 66% of persons seeking psychiatric care were 20 to 40 years of age, 25.2% were between 40 to 60 years of age, followed by 5.6% above 60 years and 2.4 % were below 20 years. Reason for majority of study subjects in the age group of 20 to 40 years could be it is economically productive age group, they are bread winners of the family. Similar findings were found by Lahariya et al., Lokesh et al.,[1,8] in an Indian study. Our study sample found slight male preponderance 54.8% and females were 45.2%. The reasons could possibly be in our country, males play a pivotal role in taking up responsibilities of family and are involved in meeting expenses of family. So any turbulence in their health, will affect family functioning and might have been brought earlier. This is not in line with Lahariya et al., study[1] on Indian population.

67.6% of study population were literates, may be due to better comprehension of illness, need for treatment, they might have approached psychiatric care. This is in line with Lokesh et al., study, Nishi et al., study[8,10] which says patients with high level of education had more positive views about approaching psychiatrist.

The sample consisted of 65.2% of unemployed people with 75.2% of low socio economic status. Reason for this may be that the sample was taken from a government hospital, which caters to people of low socio economic status, below poverty line. 57.2% of sample consisted of married subjects, 30.8% were unmarried, 5.2% are widowed and 6.8% were separated. Reason for this may be because of availability of care giving person in married population.

32% of subjects had duration of illness 1 to 5 years. Majority of study subjects were schizophrenia spectrum disorders (36.8%) followed by mood disorders (22.8%) followed by substance abuse patients amounting to 19.6%. This may be due to disorganised behaviour, disruption of daily activities might have prompted early consultation by schizophrenia and mood disorder patients than anxiety disorders.

35.2% of patients have consulted faith healers as first contact of care, as helping agency for psychiatric problems, 19.6% have not taken any treatment from any facility before coming to our tertiary care centre (IMH). So taken together more than 50% of sample have not taken any professional help for their problems. Traditional faith healers are not professionals to manage psychiatric problems. They will just treat patients with spiritual methods and practices instead of pharmacological methods. Patients also because of their ignorance or stigma about psychiatric illness might have taken faith healer's help. 19.6% of study subjects have not taken any treatment, probably they might have thought that psychiatric problem resolves on its own. This delay in consultation leads to suffering making illness all the more refractory and affects outcome. These findings are in line with Indian studies. Many patients approached allopathic practitioners, general physicians, neurologists, ayurvedic, homeo, unani specialists and approached our hospital as last resort. Our study is in line with Lahariya et al., study[1] which found 68.5% contacted faith healers as primary helping agency. Although indigenous systems like Ayurveda, unani play a minor role in management of psychiatric problems, there is a dire need to increase awareness among public to seek professional help. Longest delay in consultation as per our study was 13 years.

Even though lot of progress has happened in psychopharmacology, deinstitutionalization, it was found in our study that faith healers are the first care providers for majority of psychiatric patients [35.2%]. Some of them are reverting back to faith healers when they were not satisfied with pharmacological treatment, however we did not find such things in our study.[11] They are not approaching psychiatrist directly. 26.0% approached general physician, 16.0% consulted private psychiatrist. Only 19.6% consulted tertiary care centre (IMH) as first help seeking agency. Even though 67.6% of our sample has education they were taking a long pathway of care before consulting psychiatrists.

Delay in duration of untreated illness across various psychiatric diagnosis

Because of delay in first consultation with psychiatrists, duration of untreated illness was found to vary from 10 months to 11 years. On an average the duration of untreated illness of our sample was found to be 5.81 years. The average duration of illness for various diagnoses was highest for substance related disorders (10.6yrs), mental retardation, personality disorders (5.3yrs), schizophrenia (3.8yrs), mood disorders (3.22yrs), neurotic disorders (1.9yrs) and organic related disorders was 11months (0.93yrs).

Sociodemographic illness related variables and delay in first psychiatric consultation:

Socio demographic correlates influencing first pathway of care before consulting psychiatrists as per our study were found to be aged 20 to 40 years, predominantly females, illiterates, unemployed, having monthly income less than 10,000 rupees, need to travel more than 100kms for reaching hospital. Illness related variable like having diagnosis of schizophrenia was a risk factor for approaching faith healers as first line of contact of treatment for care.

The choice of first consultation is usually based on several factors like affordability, cost, trust in treating doctor, past experiences shared from relatives, friends. Apart from all these issues environmental aspects like location of hospital, distance travelled, accessibility influences the choice of help seeking. In a country like ours, advice given by relatives, friends, social contacts play a very important role in decision making for selecting approach.

Conclusion

Majority of patients have been found to follow indirect pathway of psychiatric care approaching faith healers, alternative systems of medicine, general practitioners and finally psychiatrists. 28.4% of study sample have not consulted any doctor for their psychiatric problem out of which 8.8% consulted faith healers. Average delay in first psychiatric consultation as shown by duration of untreated illness as per our study was found to be 5.81 yrs.

Reasons for delay in first psychiatric consultation was found to be financial limitations, stigma, ignorance on part of family members. Socio demographic risk factors associated with delay in psychiatric consultation was found to be age 20 to 40yrs, female gender, being illiterate, unemployment, long travel distance to hospital, income less than 10,000 rupees and diagnosis of schizophrenia.

Limitations of the Study

1. Our study was conducted at a tertiary care centre. A study done in general hospital would have given different results.

2. Our sample was collected in the out patient department on preferred days. Collection of sample on all days in a week would have yielded a different sample containing heterogenous diagnoses.
3. Patient groups in our study were of different diagnoses, this might have influenced results.

Implications of our study

Patients with mental illness vary in their help seeking behavior. With reference to their first care providers and time to reach psychiatrist, they follow a long pathway of care for addressing their mental health problems. It is important to sensitize non psychiatrists, general practitioners about these issues for development of effective referral mechanism.

Conflict of Interest

None.

Source of Funding

None.

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A cross sectional study on the immediate response and mental health of the people during the initial phase of covid-19 lockdown in Chennai

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Abstract
Introduction: On 24th March 2020, a 21-day nationwide lockdown was announced by the prime minister of India. This was a beginning of more phases of lockdown. People had to stay indoors, with worries about an uncertain future, about the well-being of near and dear, the lockdown added to the stress of the pandemic.
Aims and Objectives: Our study aims at finding out the responses of the residents of Chennai in the immediate aftermath of the initial 21-day lockdown and to assess their mental health at that time.
Materials and Methods: The study design was cross-sectional with a sample of 800. An online questionnaire was created using Google forms and was circulated via social media platforms. Post online consent, the participants filled up the questionnaire which included two psychiatric scales: ADNM-20 and HADS. IBM SPSS Software version 25 was used for analysing data.
Results: Out of the total 800, 215(26.84%) participants had adjustment disorder, 109(13.6%) had anxiety and 50(6.24%) had depression. Significant mean difference was observed between males and females in the scores ADNM20 (t= 81.5, p= 0.0290), ANXIETY (t= 27.5, p=0.010), DEPRESSION (t= 25.9, p=0.039). For occupations, a significant group difference was on ANXIETY scale (F= 2.427, p= 0.047) and DEPRESSION scale (F= 3.994, p=0.003). A significant group difference was observed in adjustment (F= 2.973, p= 0.019) and anxiety (F= 2.786, P= 0.026) for time spent on watching corona news. Financial worries showed a significant association with adjustment (chi =28.128, p= 0.0001), anxiety (chi= 50.252, p=0.0001) and depression (chi = 16.661, p= 0.002). A significant association was found). A significant association was found between participants picking a fight with a family members and adjustment disorder (chi =64.328, p= 0.0001), anxiety (chi= 78.089, p= 0.0001) and depression (chi= 54.667, p= 0.0001).
Conclusion: This study findings will prompt the policymakers, to intervene and prioritize mental health resources and substance use services, as these will be needed on a longer term. Domestic violence incidents that increased in Chennai during the lockdown have been highlighted in our study.

Keywords: Lockdown, Corona related news, Domestic violence.

Introduction
An epidemic occurring worldwide is Pandemic.[1] WHO declared the ongoing COVID-19 as a pandemic on 11th of March 2020. As of 15 September 2020, world over, 2,98,65,000 people are affected with ~9,41,000 deaths and 51,20,000 cases are confirmed with 83,000 deaths in India.[2] This has become an unexpected global public health challenge. On 24th March 2020, a 21-day nationwide lockdown was announced by the prime minister of India. This was a beginning of more phases of lockdown. People had to stay indoors, with worries about an uncertain future and about the well-being of near and dear, thus the lockdown added to the stress of the pandemic. According to Dr Hans Henri P Kluge, we all must cooperate as a community, to face this situation.[4] Being social is a human tendency that facilitates social interaction, and thus, when our movements are curbed, mental distress results.[5] This pandemic has led to a lot of psychological effects like anxiety and adjustment problems. The compulsory stay at home life has affected different aspects of people's life. The fear of contracting the infection was multiplied by the unavailability of resources, during the lockdown. The poignant impact of being locked down, and the weight of the resulting solitude generated waves of fear, anxiety, depression in people of all ages and groups. The doubt is increasingly testing the psychological resilience of the masses and thus makes it even more necessary to analyse the mental health of people in general and within the different sectors in specific.

This study collects information on how the various factors affect the mental status of a person during the initial period of the lockdown, so that it can be used to address the mental health of the public in future.

Aims and Objectives
Our study aims at finding out the responses of the residents of Chennai in the immediate aftermath of the initial 21-day lockdown and to assess their mental health at that time.

Materials and Methods
Study design
A cross sectional study.

Sample size
800.
Sample size was calculated based on the study variables, total sample size required is 645, considering 15 frequency per variable, question no 8 to question no 50 are the study variables in the questionnaire. Accounting for a 20% nonresponsive rate, a total sample of 800 was attempted.

Inclusion criteria
1. All people aged above 18 years, and living in Chennai,
2. Able to read English

3. People with internet connection on their phone

Exclusion criteria

1. People tested positive for COVID-19 and on treatment.
2. People in the isolation ward.
3. People in isolation/observation because of possible contact history.
4. People who have been cured from COVID-19 after treatment
5. People unwilling and not providing informed consent for the study.
6. People on treatment for known psychiatric disorders.

Procedure

Institutional ethical committee approval was obtained on a fast-track basis on 03.04.2020. An online questionnaire created using Google forms was circulated via social media from 04.04.2020 to 04.05.2020. After giving consent, the participants of the survey filled up their questionnaires.

Instruments used

There were four sections in the questionnaire.

First two sections of the form: The first part had the demographic and employment details of the participant, while the second part had questions specific to the lockdown, regarding various activities done from home during that time. These questions were meant to help in finding the social status of the participant, as well as understand the changes in their lifestyle caused due to the lockdown.

The third and fourth section of the questionnaire: 2 psychiatric scales: ADNM-20 and HADS. They were used to assess the current mental status of the participant.

The ADNM -20 (Adjustment Disorder New Module-20): is a self-report questionnaire that consists of a stressor list and an item list. Stressor list helps to identify the stressor and item list measures the symptom in response to the stressor. Since the stressor, as per this research is, the lockdown, the item list alone is used for symptom evaluation. This scale shows convergent and discriminant validity for anxiety symptoms.[6] ADNM-20 scale was used because studies show that it can be used as a screening tool for anxiety[7] and as ADNM-20 results have proven to show internal stability with its subscales.[8]

HADS scale

The HADS (Hospital Anxiety and Depression Scale) is a fourteen-item scale that consists of 2 sections with 7 issues each, to assess anxiety and depression. National Institute of Health and Care Excellence (NICE) has recommended HADS for diagnosis of depression and anxiety.[10] This scale performs well in assessing the symptom of anxiety disorders and depression in patients attending hospitals and in the general population. These 2 scales have high value for Cronbach's alpha with the coefficient of 0.94 for ADNM-20 and 0.83 for HADS.[9] Combined analysis using these 2 scales provides a more specific result.

Statistical analysis

Data was analysed with the help of SPSS version25, IBM Corp., Armonk, NY, USA. T test, ANOVA, Chi-square tests were carried out to make inferences.

Results

Table 1: Depicts the Socio-demographic profile of the study

Sociodemographic variable	Groups	Percentage	No. of individuals
Age	18-35	51.18%	410
	36-50	28.21%	226
	51-65	17.85%	143
	>65	2.74%	22
Sex	Male	45.71%	366
	Female	54.05%	434
Occupation	Healthcare	16.35%	131
	IT	9.61%	77
	Student	26.21%	210
	Homemaker	11.73%	94
	Others	36.08%	289
Marital status	Married	57.3%	459
	Single	40.9%	328
	Widowed	1.12%	9
	Divorced	0.62%	5

*Of 801 people, 410(51.18%) people were between 18-35 years, 226(28.31%) people were between 36-50 years, 143(17.85%) were between 51-65 years, 22(2.74%) were between >65 years and + 366(45.71%) were males, 434(54.05%) were females. $ In the occupation they were involved, 131(16.35%) were healthcare, 77(9.61%) are IT, 210(26.1%) are students, 94(11.74%) are homemakers, others 289(36.78%), **459(57.3%) were married, 328(40.9%) were single, 9 (1.12%) were widowed, 5 (0.62%) were divorced.

Table 2: Criteria for adjustment disorder, anxiety and depression based on the scores of ADNM -20 scale and HADS

Diagnosis of adjustment of disorder	**Criteria based on scores**	**Number (Total=801)**	**Percentage**
Present	>47.5	215	26.84%
absent	<47.5	586	73.16%
Diagnosis/ caseness	**Criteria based on score**	**Number (Total =801)**	**Percentage**
Case of anxiety	>11	109	13.6%
Borderline case	8-11	182	22.72%
normal	<7	510	63.67%
Diagnosis/ caseness	**Criteria based on score**	**Number (Total =801)**	**Percentage**
Case of depression	>11	50	6.24%
Borderline case	8-11	132	16.48%
normal	<7	619	77.28%

*Out of the total participants 215(26.84%) were found to have adjustment disorder, 586(73.16%) were not found to have adjustment disorder. 109(13.6%) were found to have anxiety disorder,182(22.7%) were found to be borderline case,510(63.7%) were found to be normal. 50(6.24%) were found to have depression disorder,132(16.48%) were found to be borderline case,619(77.28) were found to be normal.

Table 3: Mean value of the scores of the three scales used in the study and the distribution in various age groups who participated in the study

Score	**Age**	**Mean**	**Standard deviation**
Adjustment disorder	18-35	39.126	13.149
	36-50	40.5	13.149
	51-65	38.74	13.149
	>65	34	13.149
Anxiety	18-35	5.91	3.644
	36-50	5.66	4.249
	51-65	5.39	4.249
	>65	2.95	4.249
Depression	18-35	5.09	3.557
	36-50	4.61	3.559
	51-65	4.51	3.559
	>65	2.77	3.559

* Mean value for the ADNM scale was highest for the age group of 36-50 (MEAN=40.5, S. D=13.149), +whereas the mean value was highest for both anxiety and depression for the age group of 18-35 -Anxiety (MEAN=5.91, SD=4.249) and Depression (MEAN=5.09, S.D-3.559) scale of HADS.

Table 4: Shows the mean differences between males and females (Gender T test)

Variable	**Sex**	**N**	**Mean**	**SD**	**t**	**Significant**
Ajd	Male	368	38.18	13.149	81.5	0.029
	Female	433	40.25	13.084		
Anxiety	Male	368	5.25	4.24	27.5	0.010
	Female	433	6.02	4.247		
Depression	Male	368	4.50	3.559	25.9	0.039
	Female	433	5.02	3.557		

*The mean values of ADNM 20 anxiety and depression for males were found to be 38.18,5.25,4.5 respectively and 13.149,4.24,3.559 as their respective standard deviation.

+The mean values of ADNM 20 anxiety and depression for females were found to be 40.25,6.02,5.02 respectively and 13.084,4.247,3.557 as their respective standard deviation.

$ The means values of females were found to be higher than males.

** Significant difference was observed between males and females ADNM20 (t=81.5, p=0.0290), ANXIETY (t=27.5, p=0.010), DEPRESSION (t=25.9,p=0.039).

Table 5: Shows the group differences on ADNM, anxiety, depression among the various occupation

Variable	Occupation	N	Mean	SD	F	Signfnc.
Ajd	Healthcare	131	39.80	13.084	0.967	0.425
	IT	77	41.63	13.149		
	Student	210	38.9	13.084		
	Homemaker	94	39.76	13.149		
	Other	289	38.54	13.084		
Anxiety	Healthcare	131	5.38	4.247	2.427	0.047
	IT	77	6.75	4.249		
	Student	210	5.97	4.247		
	Homemaker	94	5.81	4.247		
	Other	289	5.24	4.247		
Depression	Healthcare	131	4.40	3.557	3.994	0.003
	IT	77	5.64	3.559		
	Student	210	5.26	3.559		
	Homemaker	94	5.06	3.559		
	Other	289	4.30	3.557		

*On ADNM20 scale the mean values were 39.80,41.63,38.9,39.76,38.54 for healthcare, IT, student, homemaker, others respectively and their respective standard deviation were 13.084,13.149,13.084,13.149,13.084. No significant difference was observed among the different occupation on ADNM20(F=0.967, p=0.425), + On ANXIETY scale the mean values were 5.38,6.75,5.97,5.81,5.24 for healthcare, IT, student, homemaker, others respectively and their respective standard deviation were 4.247,4.249,4.247,4.247,4.247. A significant group difference was observed among the different professionals on ANXIETY scale (F=2.427, p=0.047).

$ On DEPRESSION scale the mean values were 4.40,5.64,5.26,5.06,4.30 for healthcare, IT, student, homemaker, others respectively and their respective standard deviation were 3.557,3.559,3.559,3.559,3.557. A significant group difference was observed among the different professionals on DEPRESSION (F=3.994, p=0.003).

Further a post hoc comparison of the group was done using LSD.

**In the anxiety scale post hoc revealed a significant difference between healthcare and IT (Md=1.364, p=0.025) and IT and another group (Md=1.508, p=0.006). No significant difference was observed among other groups. In depression scale post hoc revealed a significant difference between health care and IT(Md=1.245,p=0.014) and IT and other group (Md=1.348,p=0.003), healthcare and students(Md=0.857,p=0.030). No significant difference was observed among other groups.

Table 6 shows the differences in adjustment (ADNM), anxiety and depression scores among people who had given different responses for the question ''Of the time spent on television and social media, how much time do you spend watching news, posts, write up, videos and programmes related to corona virus''

Table 6: Anova comparing the scores of ADNM-20, HADS among the various responses to the time spent on watching corona related programmes on TV

Variable	Time on TV related to Corona Virus	N	Mean	SD	F	Signfnc.
ADNM Score	Minimum	416	38.18	13.084	2.937	.019
	Most	172	41.61	13.149		
	Less than half	130	38.49	13.084		
	More than half	77	41.06	13.149		
	Whole time	6	45.83	13.084		
Anxiety	Minimum	416	5.26	4.247	2.786	.026
	Most	172	6.35	4.247		
	Less than half	130	5.86	4.247		
	More than half	77	5.81	4.247		
	Whole time	6	8.33	4.247		
Depression	Minimum	416	4.52	3.557	2.070	.083
	Most	172	5.44	3.559		
	Less than half	130	4.8	3.557		
	More than half	77	4.67	3.559		
	Whole time	6	5.33	3.557		

*A significant group difference was observed in adjustment (ADNM) (F=2.973, P =0.019) and anxiety (F=2.786, P=0.026). + Further post hoc analysis among the groups was done using LSD. It showed a significant difference IN ADNM20 between ''minimum time'' and ''most of the time'' (Md= 3.425,p=0.004) and between ''most of the time and ''less than half of the time''(Md=3.118,p=0.04).

$ Further between groups ''minimum time spent'' and ''most of the time spent.' post hoc comparison was significant in both' anxiety (Md=1.093, p=0.004) and depression (Md =0.0913,p=0.005).

Table 7: Behaviours that increased during lockdown

Behaviours that were increased during lockdown	Categories	Percentage	Actual numbers
During lockdown, how much time do you spend on Social media and television	<4	44.3%	354
	4-8	41.1%	329
Total= 801	8-12	11.7%	93
	>12		
Would you say that you spend more time pursuing your hobbies now than before the lockdown	Yes	45.1%	361
	No	31.5%	252
Total= 801	Maybe	23.5%	188
Would you say that you are working out/ exercising more than what you did before lockdown	Yes	29.8%	238
	No	44.3%	358
	May be	14.6%	116
Total= 801	I don't exercise	11.2%	89
Do you feel that you are more involved in household chores after lockdown	Yes	64.7%	518
	No	18.2%	145
	May be	15%	120
Total= 801	Prefer not to involve	2.1%	18

*When compared to before people spent more time on TV and social media during lockdown
+ 361(45.1%) said yes for spending more time pursing their hobbies now than before the lockdown
$ 238(29.8%) people said yes for spending more time for exercising,
** 518(64.7%) said yes for spending more time on doing chores,

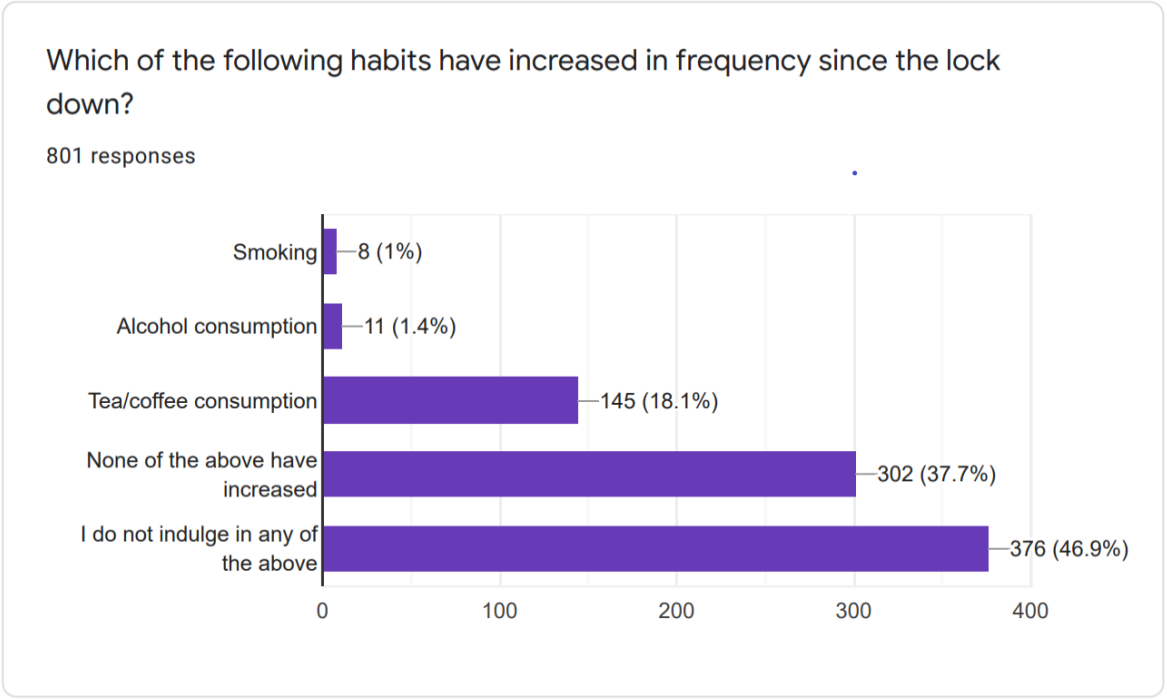

Fig. 1: Showing the frequency of various habits during lockdown

When enquired about the habits that had increased during lockdown, * 8(0.99%) people were smoking, 11(1.37%) people were consuming alcolol, 145(18.1%) people were having tea/coffee, 302(37.7%) people were none increased,376(46.9%) people were with no indulgence

Table 8: Shows the association between financial worries of the people due to sudden imposition of lockdown with Adjustment disorder, anxiety and depression

Character	Response category	Adjustment disorder			Chi square test value	P value
		Present >47.5	Absent <47.5	Total	28.128	0.0001
Finance	Yes	106	176	282		
		37.58%	62.41%	100%		
	No	47	215	262		
		17.93%	82.06%	100%		
	Not much but I do think about it	62	195	257		
		24.12%	75.87%	100%		
	Total	215	586	801		

Character	Response category	Anxiety disorder based on HADS score				Chi square	P value
		Case >11	Borderline case 8-10	Normal	Total	50.252	0.0001
	Yes	61	85	136	282		
		21.63%	30.14%	48.22%	100%		
Finance	No	25	41	196	262		
		9.54%	15.64	74.8%	100%		
	Not much but I do think about it	23	56	178	257		
		8.94%	21.78%	69.26%	100%		
	Total	109	182	510	801		

Character	Response category	Depression disorder based on HADS score				Chi square	P value
Finance		Case >11	Borderline case 8-10	Normal	Total	16.661	0.002
	Yes	19	66	197	282		
		6.7%	23.4%	69.85%	100%		
	No	15	30	217	262		
		5.72%	11.45%	82.06%	100%		
	Not much but I do think about it	16	36	205	257		
		6.22%	14%	79.76%	100%		
	Total	50	132	619	801		

*When enquired among 801 people what was their financial status or else whether they had any financial crisis during lockdown, 282(35.2%) said yes, 262(32.7%) said no, 257(32.08%) said that they didn't have much financial crisis but they consider that

+A significant association was found between the various responses about financial worries and adjustment disorder (chi square value= 28.128, p=0.0001).

$ Varying severity of anxiety (chi square value= 50.252, p= 0.0001) and varying severity of depression (chi square value = 16.661, p=0.002) were also found to be significantly associated with financial worries.

Table 9 shows various response of people to whether they had fight with a family member during the sudden prolonged confinement within their homes due to the sudden imposition of the lockdown and their association with Adjustment disorder, Anxiety and Depression

Table 9: Table showing the association between fight with adjustment disorder, anxiety and depression

Character	Response category	Adjustment disorder			CHI square	P value
		Present >47.5	Absent <47.5	Total		
Fight	Yes	76	75	151	64.328	0.0001
		50.3%	49.66%	100%		
	No	95	423	518		
		18.33%	81.66%	100%		
	May be	44	88	132		
		33.3%	66.6%	100%		
	Total	215	586	801		

Character	Response category	Anxiety disorder based on HADS score				Chi square	P value
		Case >11	Borderline case 8-10	normal	total		
Fight	Yes	46	45	60	151	78.089	0.0001
		30.46%	29.8%	39.73%	100%		
	No	46	93	379	518		
		8.8%	17.9%	73.16%	100%		
	May be	17	44	71	132		
		12.87%	33.3%	53.7%	100%		
	Total	109	182	510	801		
Character	**Response category**	**Depression disorder based on HADS score**				**Chi square**	**P value**
		Case >11	Borderline case 8-10	Normal	total		
Fight	Yes	20	47	84	151	54.667	0.0001
		13.24%	31.12%	55.62%	100%		
	No	20	63	435	518		
		3.86%	12.16%	83.9%	100%		
	May be	10	22	100	132		
		7.57%	16.6%	75.7%	100%		
	Total	50	132	619	801		

*. When enquired among 801 people that how many of them had fight with a family member during lockdown, 151(18.85%) said yes, 518(64.67%) said no,132(16.48%) said maybe.

+A significant association was found between "picking up of fight with a family member'' and adjustment disorder (chi square value=64.328, p=0.0001),

$ Varying severity of anxiety (chi square value= 78.089, p=0.0001) and depression (chi square value=54.667, p=0.0001) were also found to be significantly associated with picking up a fight with a family member.

Discussion

Data was collected from various sections of people in Chennai. The main aim was to assess the immediate psychological response of people, to the sudden announcement of lockdown by the government, in the initial phase of Corona spread in India. We wanted to analyse the mental status of the people as to how they suffered to cope with the sudden changes in their lifestyle that was imposed upon them, in the face of uncertainty, due to the lockdown. Out of the total participants 26.84% were found to have adjustment disorder, 13.6% were found to have anxiety disorder, 22.7% were found to be borderline case of anxiety, 6.24% were found to have depression disorder,16.48%were found to be borderline case of depression. This finding is in line with the Northern Spain study[10] by Niara Ozamizetcibarriain which more than a quarter of the participants have reported symptoms of depression (27.5%), anxiety (26.9%) and stress (26.5%) and also the Spanish study[11] by Rocio Rodreguezrey in which 59.1% showed normal levels, 11.4% showed mild depression, 14.8% showed moderate depression, 6.3% showed severe depression, 8.5% showed extremely severe depression.

In our study, mean value for the ADNM scale was highest for the age group of 36-50, and the mean value was highest for the age group of 18-35 in both Anxiety and Depression scales. Similarly, greater symptomatology was found in younger population in the study done in Northern Spain[10] by Naiara Ozamizetxebarria. These findings could

be explained by the fact that both these age groups combined comprise most of the working population of Chennai. Sudden imposition of work from home by their respective companies due to the lockdown, drew many of these people, to experience burnout and psychological distress.

The mean scores of all the scales were found to be higher for females than males, similar to the INDIAN study published in the Community Mental Health Journal[12] by Usama Rehman in which females had higher mean values of stress. This may be due to the fact that females were all the time involved in household chores during the lockdown, without any break, that they enjoyed, before the lockdown. This was due to multitude of factors like- schools and workplaces were shut and all people of the household were at home 24/7, the social norm in Chennai that women are expected to cater to the needs of their family members and lack of help from their maids or cooks who were not available during the lockdown.

A significant group difference was observed among the different occupations, on anxiety & depression, similar to the INDIAN study published in the Community Mental Health Journal[12] by Usama Rehman, in which significant group difference was found among various occupation in stress, anxiety and depression. In our study, there was significant difference in anxiety and depression score between IT and healthcare. The healthcare people had lesser scores when compared to IT. This could be explained by the fact that healthcare workers would be better equipped with scientific information regarding the covid19 virus and the spread of the illness, which helped them to take the necessary precautions without getting much stressed, compared to the IT people who were loaded with data from various sources which only confused them. In our study IT people had the highest mean score for all the three scales, this could be because of the immediate effects of lockdown like a pay-cut, sudden drop in income or freelance work disappearing overnight. Worrying about losing job is a much bigger concern than loss of income. The loss of identity, both as a professional and perhaps as the family breadwinner could have been the contributing factor for their distress.

In this study we clearly see that the ADNM, Anxiety and Depression scores increased linearly with the increase in exposure to news related to CORONA. This is in line with various studies conducted after previous natural disasters and mass events. Several hours of daily media exposure during the Ebola outbreak in 2014 increased the distress and worry of people and decreased their functioning.[16] Similarly, In comparison to people who were at the actual site of the bombings, acute stress symptoms were higher among people who had more media exposure, during the Boston bombings.[17] This could be explained by the fact that watching the negative and horrific news all day will activate our sympathetic nervous system and can lead to problems in our physical and mental health

As far as, the way in which the excess time was spent, When compared to before lockdown, people in our study, seem to have spent more time on TV and social media during lockdown, similar to a study done in Spain[13] by Ruben Lopez Bueno in which spending time in front of TV and computers was the only habit that increased during lockdown. Majority of people said Most of their time was spent on hobbies. In the West Bengal study[14] by Kaustav Charaborthy, people reported to be engaged in the following hobbies during lockdown-reading books-3.3%, listening to music -12.8%, painting-0.9%.

Nearly half of our study population was spending their time on Exercising during the lockdown, Like the Chinese study[15] by Zhang – 59.7% reported that much of their time was spent in doing exercises. In our study, 518(64.7%) people admitted that they were more involved in household chores after lockdown. Similar to the West Bengal study[14] by Kaustav Charaborthy, in which 62.9% said they were doing household chores. This increase could be because, as the lockdown began, housing Societies in Chennai banned cooks, maids and plumbers as possible carriers of the virus. So the burden of the house hold chores had to be borne by the people, who also saw it, as a good pass time, to beat the boredom.

In our study, the habits that increased during lockdown were smoking 8(0.99%), alcohol 11(1.37%), 145(18.1%) people were having tea/coffee. This is in contrast to the study in Spain[13] by Ruben Lopes Bueno in which it was reported that alcohol, tobacco progressively decreased during COVID-19 confinement in Spain. This increase in these habits in our study could be explained by the boredom, lack of social contacts, loss of daily structure, lack of reward after a hard working day, loneliness that people were made to go through during the lockdown.

People who had financial worries were found to have adjustment disorder, anxiety and depression. This is line with the online study conducted by the IIM Lucknow[18] by Satyabushan das in March 2020 in which, majority of study population were worried about the financial implications of the pandemic rather than their health due to which People felt more fearful and sad People who fought with a family member were found to have Adjustment disorder, Anxiety and Depression. In the West Bengal study[14] by Kausthav Chakarbarthy – 37.1% were more irritable during lockdown. During the lockdown period in Chennai, even minor arguments m had couples fighting over issues such as women doing all the household chores, excessive use of mobile phones and altered behaviour due to alcohol withdrawal.

In our study females were found to have more anxiety and depression and also scored high on ADNM-20 scale. Also, we found that these scores were high for people who admitted having" picked up a fight with family members". This is explained by the alarmingly high number of domestic violence cases reported in Chennai during the lockdown. Complaints received by the National Commission for Women (NCW)[19] during the lockdown from March 24 to May 31, in numbers, was, 45 in Chennai,257in Coimbatore, 105in Tirupur. Women in Tamil Nadu, compared to those in other states, since a

long time, have accepted violence against them and perceive it as normal. 86% of women, do not complain though they were abused, 77% women hide that any abuse happened. These alarming statistics explains the results of our study. Financial crisis, Job insecurity and increasing family burden superadded to substance abuse could have contributed to the alarming rise in incidence of domestic violence.

Conclusion

Our study found the behavioural adaptation of various social groups in Chennai. Our study also highlighted a few positive aspects of the lockdown. This study findings will prompt the policymakers, to intervene and prioritize mental health resources and substance use services, as these will be needed on a longer term from now. Domestic violence incidents that increased in Chennai during the lockdown have been highlighted in our study. As the pandemic spread, another problem that spread across the world was that of domestic violence, which made a lot of people suffer in silence inside their homes, making the United Nations describe the situation as Double Pandemic.

Recommendations

Public should select one or two trusted sources (such as the, Centres for Disease Control, World Health Organization) to stay updated, limit monotonous exposure to media stories on death due to corona, and ignore reports on social media whose authenticity cannot be ensured. People should watch good news of people recovering and returning home to develop HOPE, as recommended by WHO. Everyone in the family and community should be sensitised enough to intervene if they suspect an incident of domestic violence. If we do not intervene when an incident happens, the lockdown will reinforce the patriarchal institution of violence against women again. Governments should prioritize mental health as much as contact tracing and personal protective measures. Authentic information should be easily available to the public along with easy access to mental health professionals through telepsychiatry.

Trying to distract ourselves from the overload of corona news and getting involved with music, books, dance and watching programs on TV and on OTT platforms, may help to keep ourselves occupied with peace of mind.

Limitations

The study sample is limited, non-inclusive, and non-representative of the population of Chennai at large. The respondents who do not have an access to the Internet like the people who reside in remote areas and the lesser privileged who didn't have a smart phone with WhatsApp, were not included in the study.

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None.

Conflicts of Interest

There are no conflicts of interest.

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A study to assess knowledge about child development in caregivers attending the child psychiatry outpatient department

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Abstract
Background: The initial years of child nurturing plays an important role in child development and lifelong learning. Parents' knowledge is considered to be the frame of reference for parents' interpretations of their child's behaviour and provides the basis for having the appropriate expectation of the child's developmental stage. When developmental delays are identified at the appropriate time, it increases the scope to initiate early intervention. Early intervention in children with developmental delay, can not only improve the overall disease outcome but also it provides support to family members.
Aim: To assess the caregivers' knowledge about child development and to study the association between caregivers' knowledge and sociodemographic parameters.
Materials and Methods: 110 Caregivers of children presenting to the child psychiatry OPD were screened for assessment criteria. A semi-structured intake proforma was administered to collect the sociodemographic details. Caregiver knowledge of child developmental inventory was applied on caregivers to garner the responses.
Results: 84% of caregivers were mothers. On an average, caregivers were able to answer only 36% of the questions correctly. Maternal age (p=0.048) and maternal education (p=0.009) were identified to be significant predictors of higher CKCDI scores.
Conclusion: Caregiver's knowledge regarding the child development is low. Younger mothers and higher maternal education are associated with higher knowledge about the development of their children.

Keywords: Child development, Caregiver's knowledge.

Introduction
Developmental milestones are a specific set of skills that are achieved by the child as a result of interaction with the environment. Usually, one is able to determine the age of achievement of each developmental milestone. Classification of developmental milestones is as follows: gross motor, fine motor, socio-emotional, language and cognitive.[1]

Gross motor skills are those skills which involve large muscle groups of the body to perform daily activities like walking, running, standing, sitting, throwing and catching. Fine motor skills refer to those skills which require the use of small muscles that control the movement of hands and fingers. This enables the child to eat, write and to do other fine activities such as buttoning, zippering etc**.** Language development is the process by which children can understand and communicate effectively with others. Cognitive development is the construction of thought processes, which includes memory, judgement, problem solving and decision-making. Social-emotional development includes the child's experience, expression, and management of emotions and the ability to establish positive and rewarding relationships with others.[1]

Nervous system apparently needs a certain amount of stimulation to function properly. A significant lag in reaching the typical childhood developmental milestones in the areas of motor, language, cognition, social and emotional functioning is referred to as developmental delay.[2]

As per the report given by WHO, around 5% of children under the age of 14 years suffer from developmental delay and approximately 2% of children under 2 years of age suffer from developmental delay.[3] A study conducted by Kaur P et al in 2006 studied the clinical profile of children attending an early intervention program. Their study revealed that majority of the children suffered from mental retardation, others had a diagnosis of cerebral palsy and epilepsy. Learning disorders, ADHD and autism were also seen in few children.[4]

In India, mean age of referral to early intervention programs was found to be 3-4 years. This is in contrast with a study done in USA where the mean age of referral was 1.2 years. This difference could be accounted due to the stigma associated with seeking help from special institutes in developing countries.[5]

When a child with developmental delay receives timely and appropriate services such as therapies in the form of occupational therapy, physical therapy or speech therapy, it has shown to result in positive outcomes. Increased intellectual competence, less disruptive and aggressive behaviour, more parental involvement in schooling, better academic performance and improved work skills are some of the noted benefits of early intervention.[6]

A RCT conducted to examine the effectiveness of a 6-month early intervention program versus traditional home visiting in children with developmental delay, found that the group that received early intervention showed faster progress rate in self-care functions (p=0.006, cohen's d=0.87) and independence in social functions (p=0.027, cohen's d= 0.83).[7]

The term "knowledge" refers to facts, information, and skills gained through experience or education and understanding of an issue or phenomenon.

Caregiver is defined as a non-professional person in the community who is mostly involved in everyday care of the child and one who attends to the needs of the child.[8] Caregiver's knowledge is defined as understanding of developmental milestones, processes of child development and adapting caregiving skills by caregivers. The effective parent-child interaction and promoting development of children is dependent on the knowledge and awareness of parents to understand the processes of normal child development, caregiving skills as well as familiarity with child-care skills.[9]

Parental expectations and interactions with their child are influenced by their existing knowledge of child development. High parenting efficacy and competence was seen in those parents who had a sound knowledge about child development.[10]

Parental awareness about parenting and child development plays an important role in cognitive motivation which in turn promote cognitive, emotional and social competency of the child. Therefore, parental knowledge is one of the important aspects of child nurturing, more knowledgeable parents are more effective for their children.[9]

Research from developing countries have focused primarily on weight and nutritional status of the child and limited literature is available with regards to parental perceptions of child development.[11] Hence, there is a need to assess the level of knowledge about child development among caregivers as it plays a vital role in accessing health care facilities.

Aim

1. To assess the caregiver's knowledge about child development.
2. To study the association between the caregiver's level of knowledge and sociodemographic parameters.

Materials and Methods

Study design

A cross sectional, outpatient-based study was conducted in the department of child psychiatry, Niloufer hospital, Hyderabad, India.

Study subjects

A convenient sample of 110 caregivers accompanying the child were recruited for the study.

Inclusion criteria

1. Male and Female
2. Caregivers of children below 12years presenting to child psychiatry OPD.

Exclusion criteria

1. Not willing to give consent.
2. Caregivers who had previously provided care to a child with delayed milestones.

Instruments used

1. All sociodemographic and clinical details were captured using a semi structured proforma: Caregiver's relation, parent's age, parent's education, parent's occupation, socioeconomic status, family type, religion, domicile, parity, whether provided care for another child with delayed milestones, assistance for childcare, age of child, diagnosis, duration of illness, mode of referral, time spent with health care worker.
2. Caregiver knowledge of child development inventory [12] : this questionnaire consists of a total of 20 questions. It is further divided into 3 components (i) component 1 - cognitive and social-emotional development of young infants (ii) component 2 - cognitive and social-emotional development of toddlers (iii) component 3 - gross and fine motor development. Each question has a maximum score of 2 and a minimum score of 0. Higher scores indicate higher level of knowledge. Answers that fall within the correct range were given 2 points. Answers that fall 1 month below or above the correct ranges were given 1 and all other answers considered incorrect were given 0 points. Internal consistency was evaluated by Cronbach alpha and was found to be 0.61 for the total scale. The construct validity was determined by factory analysis and all questions except question 20 had a loading of 0.30.

Methodology

Caregivers' of patients attending the child psychiatry OPD were screened for assessment criteria. A key caregiver was identified. Out of the total caregivers attending the child psychiatry outpatient department during the period of the study, 110 caregivers fulfilled the recruitment criteria and were willing to give consent for participation in the study. Caregivers who had previously provided care to a child with delayed milestones will be equipped with prior knowledge because of the interaction with healthcare professionals earlier. Hence, those caregivers were excluded as there is a possibility of information bias amongst them. Study details were explained and a written informed consent was undertaken. A semi structured proforma was administered to collect the sociodemographic details. Caregiver knowledge of child developmental inventory was administered. Completed forms were scored and data entry was done.

Statistical analysis

Statistical analysis was performed using SPSS version 20 software. For analysing the level of knowledge among caregivers, descriptive statistics of each item was determined. The effect of independent sociodemographic and clinical variables on CKCDI scores were assessed using linear regression model.

Ethical aspects

Ethics clearance was given by the Institute Ethics Committee (Reg. No. ECR/300/Inst/AP/2013/RR-19). Informed consent was taken from the participants of the study. Individuals had the right to withdraw their consent from participation any time after inclusion into the study. Individual's non participation did not have any bearing on their treatment. The identity of the individual was kept confidential. The scale included in the study is freely available in the public domain for research and academic purposes.

Results

Sociodemographic characteristics

A total of 110 caregivers were interviewed. Majority of the caregivers were identified to be mothers (84.6%). On an average, mothers were found to be of 29.6 (SD=6.8) years and mean age of fathers was 35.7 (SD=7.4) years. Majority of mothers (46.2%) and fathers (52.3%) received education up to secondary level. Most of the mothers were unemployed (76.9%) and most of the fathers were semiskilled workers (50.9%). Most of the children were brought up in nuclear families (58.5%) and were from urban background (70.8%). Almost one fourth of the children were single children. A majority of the mothers did not receive assistance for child care (60%). Most children were diagnosed to be suffering from mental retardation and their mean age was 5.25 years. 75% of the children presented to the child psychiatrist through a medical channel. Average duration of illness was found to be 3.3 years. Most caregivers reported that they had spent an average of 4.1 hours with health care worker. (Table 1).

Knowledge of developmental milestones

The results revealed that the mean score on CKCDI questionnaire scale was 14.45 (± 5.8). The mean score in component 1 was 3.29 (± 2.9), component 2 was 5.6 (± 3.0) and component 3 was 3.57 (± 2.0). Most caregivers were able to answer correctly to questions such as, when to notice social smile in their children (54%), at what age do children begin imaginary play (66%) and when should children be taught to count numbers (66%). A major portion of the caregivers were unaware of the correct age of development of the brain (80%), the age at which children begin to give verbal responses to someone talking to them (73.8%), the age at which children start to follow moving objects with their eyes (77.4%), the appropriate age at which mothers should begin to talk to their child (87.7%) and the age at which mothers should encourage reading books with their children (97%). (Table 2)

Using linear regression model, correlation between the sociodemographic parameters and the scores obtained was performed. This analysis revealed that there was no significant correlation between the scores obtained and relation of the caregiver, family type, domicile, parity, occupation of the parents, socioeconomic status, religion, paternal age and education. However maternal age (p=0.048) and education (p=0.009) were found to be independent predictors of higher scores. (Table 3)

Table 1: Sociodemographic characteristics

Parameter	**(%)**	**Mean**	**SD**
Relation with child			
Mother	84.6		
Father	15.4		
Maternal age (years)		29.6	6.8
Paternal age (years)		35.7	7.4
Maternal education			
Illiterate	20		
Primary	13.8		
Secondary	46.2		
Undergraduate	20		
Postgraduate	0		
Paternal education			
Illiterate	20		
Primary	6.2		
Secondary	52.3		
Undergraduate	21.5		
Postgraduate	0		
Maternal occupation			
Unemployed	76.9		
Unskilled	15.4		
Semiskilled	4.6		
Skilled	3.1		
Paternal occupation			
Unemployed	1.5		

Unskilled	21.5		
Semiskilled	50.9		
Skilled	20		
Socioeconomic status			
Below poverty line	6.4		
Lower	11.7		
Lower middle	21.2		
Higher middle	33.8		
Higher	26.9		
Family type			
Nuclear	58.5		
Joint	41.5		
Domicile			
Urban	70.8		
Rural	29.2		
Religion			
Hindu	42.7		
Christian	31.2		
Muslim	26.1		
Parity			
Single	24.6		
Multiple	75.4		
Assistance for childcare			
Yes	40		
No	60		
Diagnosis			
Mental retardation	57.6		
Disorders of psychological development	23.9		
Behavioural and emotional disorders with onset in childhood and adolescence	18.5		
Age of Child (years)		5.25	3.1
Mode of referral			
Medical	75.4		
Non medical	24.6		
Duration of Illness(years)		3.3	1.7
Time spent with health care worker (hours)		4.1	2.6

Table 2: Caregiver Knowledge of Child Development Inventory

Questions	**% incorrect answers**	**Mean answer (months)**	**SD (months)**
When does a child's brain begin to develop and learn ?	80.4	64	6.8
When do children begin to see ?	50.8	2.5	3.3
When do children begin to follow a moving person or toy, with their eyes?	77.4	8.95	4.45
When do children begin to vocalize in response to someone talking to them?	73.8	7.96	5.5
When do children begin to smile socially, that is smile into the face of another person?	46.2	5.2	5.3
When do children begin to say single meaningful words?	35.4	11.9	5.6
When do children begin to play imaginary play like feeding a doll or driving a toy car?	34.0	12.3	7.0
When do children begin to reach for a toy in front of them?	80	8.8	4.0
When do children begin to grasp tiny things like raisins, with their fingertips?	53.8	9.8	4.7
When do children begin to walk alone with good co-ordination?	30.8	11.6	4.4

When should mothers begin to talk to children?	87.7	9.1	6.8
When should mothers begin to show colorful objects to children to help them practice reaching?	83.1	8.8	6.2
When should mothers begin to teach children to count?	33.8	15.1	9.6
When should mothers begin to teach children colors?	40	14.3	10.1
When should mothers start to give children a spoon or a fork to let them eat by themselves?	60	18.0	12.5
When should mothers begin to let children sit with support?	65.2	9.7	4.1
When should mothers begin to give children clean and safe objects or toys which they can mouth?	43.1	9.3	7.9
When should mothers begin to look at children's books with their children?	96.9	14.11	12.3
When should mothers begin to give children clean and safe household items to play with?	44.6	9.8	7.8

Component 1: cognitive and social-emotional development of young infants; component 2: cognitive and social emotional development of toddlers; component 3: gross and fine motor development.

Table 3: CKCDI mean total scores and sociodemographic correlates

Parameter	**'p' value**	**Test statistic**
Maternal Age	0.048*	t=3.721
Paternal Age	0.091	
Maternal Education	0.009*	x^2=4.06
Paternal Education	0.072	
Maternal Occupation	0.161	
Paternal Occupation	0.301	
Family type	0.078	
Parity	0.088	
Domicile	0.731	
Socioeconomic status	0.095	
Religion	0.513	

*$p < 0.05$

Discussion

The current study aimed at exploring the knowledge possessed by caregivers regarding child development. There is quite a large research base dwelling into parenting practices and child outcome, however limited research is available with respect to caregiver's knowledge about child development. Since caregiver's knowledge lays the foundation to influence their behaviour and care giving practices, it eventually contributes in impacting the overall wellbeing of the child.

Our study revealed that the overall knowledge concerning child development is low with a mean score obtained on CKCDI to be 36% of the total. Similar score has been reported in a study conducted by Shrestha et al. (2017) where the mean score obtained was 40% of the total.[13] Another study by Arulmurugun et al. (2020) stated that only 50% of the mothers could accurately estimate child developmental milestones, and 27% of them had underestimated whereas 18% overestimated child developmental milestones.[14] This may be a reflection of the fact that in developing countries the major source of knowledge is based on informal sources like discussing with relatives and comparing with siblings. In India, there are both, familial and cultural sources of information from which caregivers derive their beliefs about child development.[15]

Estimating the appropriate timing of developmental milestones has dire consequences. Firstly, underestimating the age of achievement can lead to caregivers being anxious and intolerant of their child's behaviour. This may also pose a risk for child abuse. Whereas, overestimating the age of achievement can lead to under stimulation of the child to help them develop necessary skills and more importantly they can miss the opportunity to detect developmental delay.

In our study population majority of the participants (80%) were unaware of the timing of brain development. This is comparable to the study conducted by Zellman et al where it was found that less than 15% believed that brain development occurs in the perinatal period.[16] It is important for caregivers especially mothers to understand this, as perinatal maternal malnutrition, exposure to toxic substances, maternal infections and certain medications can interfere with healthy brain development of the fetus and being aware of this would encourage mothers to take

necessary precautions to reduce the risk of abnormalities in brain development.

Strikingly 74% of caregivers were unable to tell the age at which children start to give verbal responses to someone talking to them. According to a study conducted by Ertem et al (2007) 79% of mothers did not know that vocalisation occurs in the early months of life.[12] There is considerable evidence that when children are encouraged to initiate and sustain a conversation by simply talking to them more frequently, it can result in better vocabulary development. Apart from talking to children more often, the quality of language used by caregivers affects the vocabulary of their child.[17]

This study found that 66% of the caregivers did know when to initiate imaginary play among children. Imaginary play provides opportunity to think and express emotions. It can also enhance the ability of the child to have an alternative understanding of a particular situation, it teaches them new ways to react to situations and also to realise the cause-and-effect nature of relationships.[18]

It was observed that most caregivers (66%) took the initiative to teach their children to count numbers. It is demonstrated that in families where children are involved in number talk during daily routine, have a higher chance of success in later math achievement.[19]

The larger number of mothers (97%) were unable to determine when to start reading books with their children. This is congruent with Ertem et al (2017) where 95.2% of them answered incorrectly. It was also found that this activity was least known among the mothers. However shared book reading by parents carries multi-fold significance. It helps children understand that spoken language can be represented visually, improves their phonological awareness, children begin to understand language and syntax better as well as learn new concepts and story structure. Book reading on a daily basis inculcates the habit of establishing routines and contributes in shaping sleep wake patterns.[20]

Maternal education played a significant role in determining the total score obtained and more specifically to the cognitive and social emotional development of toddlers. ($p=0.009$). This finding is congruent to the results published in a study by Borstein et al. where mothers who were more educated had higher CKCDI scores ($p<0.001$). Mothers who are well educated believed that they have the ability to change and improve the environment.[21] They were also more vigilant about their children's behaviour and any deviation from the normal was easily noticed by them. Parents who are more aware of child development tend to interact more positively with their children as compared to those who have lesser knowledge. Such parents also have realistic expectations for their child which improves the quality of parent child interaction.[22]

Our study found that younger mothers significantly scored more on CKCDI ($p=0.048$). However, this finding is in contrast to the study conducted by Safadi et al (2016) where no correlation was found between the level of knowledge and maternal age.[23] This difference might be attributable to the fact that in our study sample younger mothers were more highly educated.

Limitations

One of the limitations is that, this study did not explore into the cultural practices and beliefs about child rearing. Second, the level of knowledge was assessed only in one key caregiver. A more elaborative analysis in other family members may reflect the overall level of knowledge about child development, which can influence the help seeking behaviour of the caregiver. Further due to small sample size and as convenient sampling was used, the findings of the study cannot be projected to general population.

Conclusion

Caregiver's knowledge regarding child development appears to be low. Caregiver's sociodemographic parameters had little influence on the overall level of knowledge. Future studies can further assess how cultural practices and child rearing beliefs influence child development. The results of this study suggest that increasing the awareness about child development among caregivers especially mothers can be beneficial.

Future Direction

Beliefs and attitudes related to child development and factors that are associated with maternal knowledge need to be further investigated. This helps us to plan for culture specific, focused and effective interventions.

The CKCDI may be employed as an instrument to determine caregiver knowledge of child development, so that caregivers who are in greater need for information can be addressed.

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Conflicts of Interest

There are no conflicts of interest.

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Burnout and its impact on mental health of physicians during the COVID -19 pandemic: A cross-sectional study from South India

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Abstract

Background: A large number of doctors are experiencing Burnout during the present COVID-19 pandemic. Excessive workload, uncertainty, longer working hours, work - family conflicts, and difficult working conditions during the pandemic are some of the reasons for physician Burnout. The greatest risk of Burnout is that doctors may feel disconnected with their profession and are more likely to suffer from various mental health issues.

Aim: To assess Burnout and its impact on mental health of physicians during the COVID-19 pandemic.

Materials and Methods: A cross-sectional study was conducted on physicians working at Government designated COVID-19 Hospitals of a city in South India in May 2020. Purposive sampling technique was used in the study. One hundred and eighty eight (188) physicians were included in the study and were given the requisite material and study tools via email, after providing them with information about the study and tools for assessment. Oldenburg Burnout Inventory (OLBI) was used to assess Burnout. Hospital Anxiety and Depression scale (HADS) was used for screening of anxiety and depression in physicians. Chi-square test and Pearson's correlation were used in statistical analysis.

Results: Burnout was noted in 54.3% of physicians. Anxiety and Depression was seen in 14.9% and 15.4% of the physicians respectively. Age, presence of anxiety and depression had a significant association with Burnout. Disengagement group showed a stronger positive correlation with depression, while exhaustion group showed a stronger positive correlation with anxiety.

Conclusion: Burnout, anxiety and depression levels amongst physicians noted in the current study seem to be far less when compared to other existing studies. This could be resultant from better preparedness of physicians for public health crisis compared to other health care workers. The high rates of Burnout, anxiety and depression among physicians during the pandemic highlights the need for designing the appropriate psychological interventions by the healthcare system to support the physicians working in the midst of COVID-19 pandemic and in the post-pandemic era.

Keywords: Anxiety, Depression, Disengagement, Doctors, Exhaustion.

Introduction

The word 'Burn out' was coined by psychologist Herbert Freudenberger. It is a state of extreme mental exhaustion resulting from factors related to one's professional life. The three characteristic features of Burn out are emotional exhaustion, depersonalization and a reduced sense of accomplishment or success.[1] The COVID-19 pandemic has led to a devastating effect on health care workers, who run the risk of Burnout, with the worry about their own health, fear of infecting family members, managing with limited such as personal protective gears, working in unfamiliar clinical conditions, and, having to make difficult decisions about who should receive critical care when resources such as ventilators are limited in number.[2]

Existing literature on Burnout has focused on the negative consequences of mental health.[3] An association between Burnout and depression as well as between Burnout and anxiety have been already described in literature.[4-7] A cross sectional study done in China on 1257 health care professionals during the COVID-19 pandemic showed that 50.4% had depressive symptoms, 34.0% had insomnia, 44.6% with anxiety and 71.5% reported distress. The study highlighted that the healthcare professionals working in the frontline during the pandemic are prone for worse mental health outcomes.[8] In the present study, the authors have made an attempt to assess Burnout and its psychological impact in physicians during the COVID-19 pandemic.

Materials and Methods

This was a cross-sectional study conducted on physicians working at Government designated COVID -19 Hospitals of a city in South India in May 2020. Permission was obtained from the Institutional Ethics Committee to conduct this study. Purposive sampling technique was used in the study. 240 physicians were contacted over phone and verbally explained about the study, out of which, 212 physicians expressed their willingness to participate in the study. The willing physicians were provided with participant information sheet, informed consent form, and study questionnaires through email correspondence. The participant information sheet had a statement about the history of prior mental health illnesses which was the only exclusion criterion. Out of 212 physicians, 24 have reported history of prior mental illness and hence, were excluded from the study sample. Thus, final sample of study consisted of 188 physicians. The questionnaires that were included in the study tools comprised of 2 sections:

i. The first section included sociodemographic characteristics of the physicians.
ii. The second section was a questionnaire that has two scales:

1. Oldenburg Burnout Inventory (OLBI) is a 16-item scale to measure Burn out in physicians from work related adverse experiences, including feelings of disengagement and exhaustion from work. It has two dimensions' disengagement and exhaustion. The reliability of the exhaustion subscale has been found to range from α=.74 to α=.85, and the reliability of the disengagement subscale from .73 to .85 across various studies.[9] Each sub scale consists of 8 items, four positively phrased and four negatively phrased items, presented in mixed order. Each item has four responses ranging from 1 (strongly agree) to 4 (strongly disagree). [10] Cut off score ≥ 2.25 on exhaustion were considered as having high exhaustion, while scores ≥ 2.1 on disengagement were considered as high.[11] Based on the disengagement and exhaustion scores, the four Burn out groups were:
   i. Non-Burnout (low disengagement score and low exhaustion score),
   ii. Disengaged (high disengagement score and low exhaustion score)
   iii. Exhaustion (high exhaustion score and low disengagement score)
   iv. Burnout (high disengagement score and high exhaustion score)

2. Hospital Anxiety and Depression scale (HADS) is a self-assessment 14 item scale which has 7 questions on depression and 7 questions on anxiety.[12] Each item has 4 responses ranging from 0 to 3. A score of 0 to 7 is normal, 8 to 10 is borderline, while 11 to 21 is considered as clinical caseness. HADS was developed for assessing nonpsychiatric patient's emotional state. It has been previously found that the correlations between the two subscales varied from .40 to .74 (mean .56) and, Cronbach's alpha for HADS-A varied from .68 to .93 (mean.83) and for HADS-D from .67 to .90 (mean.82).[13]
3. Sleep disturbance was assessed with one single question 'Did you experience any sleep disturbance during past 1 week' with 4 responses like Never, Sometimes, Often, Daily.
4. Questions on physical symptoms like Headache, Neck pain, Back pain, Chest pain, Pain abdomen, Nausea, were assessed with yes/no answers. The inclusion of these specific symptoms was based on the common physical symptoms associated with stress and Burnout in literature.[14]

Results

Statistical analysis was performed by using SPSS-16 version and in MS-Excel 2007. Qualitative variables were expressed as in frequencies and percentages. The data was normally distributed; this was checked with the help of the Kolmogorov Smirnov test. Chi-square test was used for examining the categorical data. Fisher's exact test was used for examining the associations between age groups and Burnout. Karl-Pearson's correlation coefficient was used to explore the relationship between quantitative variables. ANOVA was used to compare the means between more than two groups. For all statistical analysis $p<0.05$ was considered statistically significant.

Burnout data analysis

Of 188 physicians, 54.3% were in the Burnout category (high disengagement and high exhaustion), 6.4% were in the Exhaustion category (high exhaustion and low disengagement), 17.5% were in the Disengaged category (high disengagement and low exhaustion), while 21.8% were in Non-Burnout category (low disengagement and low exhaustion).

Hospital Anxiety and Depression (HADS) data analysis

Anxiety was noted in 14.9% and Depression was seen in 15.4% of the total sample.

Table 1: Associations between socio-demographic characteristics, presence of anxiety and depression in physicians vs four Burnout categories.

Characteristics		Non-Burnout N (%)	Disengaged N (%)	Exhaustion N (%)	Burn out N (%)	Total N (%)	P value
Total		41 (21.8%)	33 (17.5%)	12 (6.4%)	102 (54.3%)	188 (100%)	
Age group	25-35 yrs.	41	33	12	16	102 (54.3%)	0.001*
	36-45 yrs.	0	0	0	52	52 (27.7%)	
	46-55 yrs.	0	0	0	18	18 (9.6%)	
	56-65 yrs.	0	0	0	12	12 (6.4%)	
	66-75 yrs.	0	0	0	4	4 (2.1%)	
P Value		0.001*	0.001*	0.001*	0.001*		
Gender	Male	23	15	7	46	91 (48.4%)	0.571
	Female	18	18	5	56	97 (51.6%)	
P Value		0.435	0.602	0.564	0.322		
HADS Anxiety	>=11	3	2	3	20	28 (14.9%)	0.024*
	<11	38	31	9	82	160 (85.1%)	
P Value		0.001*	0.001*	0.083	0.001*		

HADS Depression	>=11	4	2	2	21	29 (15.4%)	0.038*
	<11	37	31	10	81	159 (84.6%)	
P Value		0.001*	0.001*	0.021*	0.001*		

*P value <0.05 was statistically significant.

Table 2: Pearson's Correlation coefficients between OLBI and HADS scores

		Disengagement	Exhaustion	Anxiety	Depression
Disengagement	R	1	.761	.569	.626
	P value	0.001**	0.001**	0.001**	0.001**
	N	188	188	188	188
Exhaustion	R	.761	1	.686	.672
	P value	0.001**	0.001**	0.001**	0.001**
	N	188	188	188	188
Anxiety	R	.569	.686	1	.837
	P value	0.001**	0.001**	0.001**	0.001**
	N	188	188	188	188
Depression	R	.626	.672	.837	1
	P value	0.001**	0.001**	0.001**	0.001**
	N	188	188	188	188

**P<0.01 was statistically highly significant

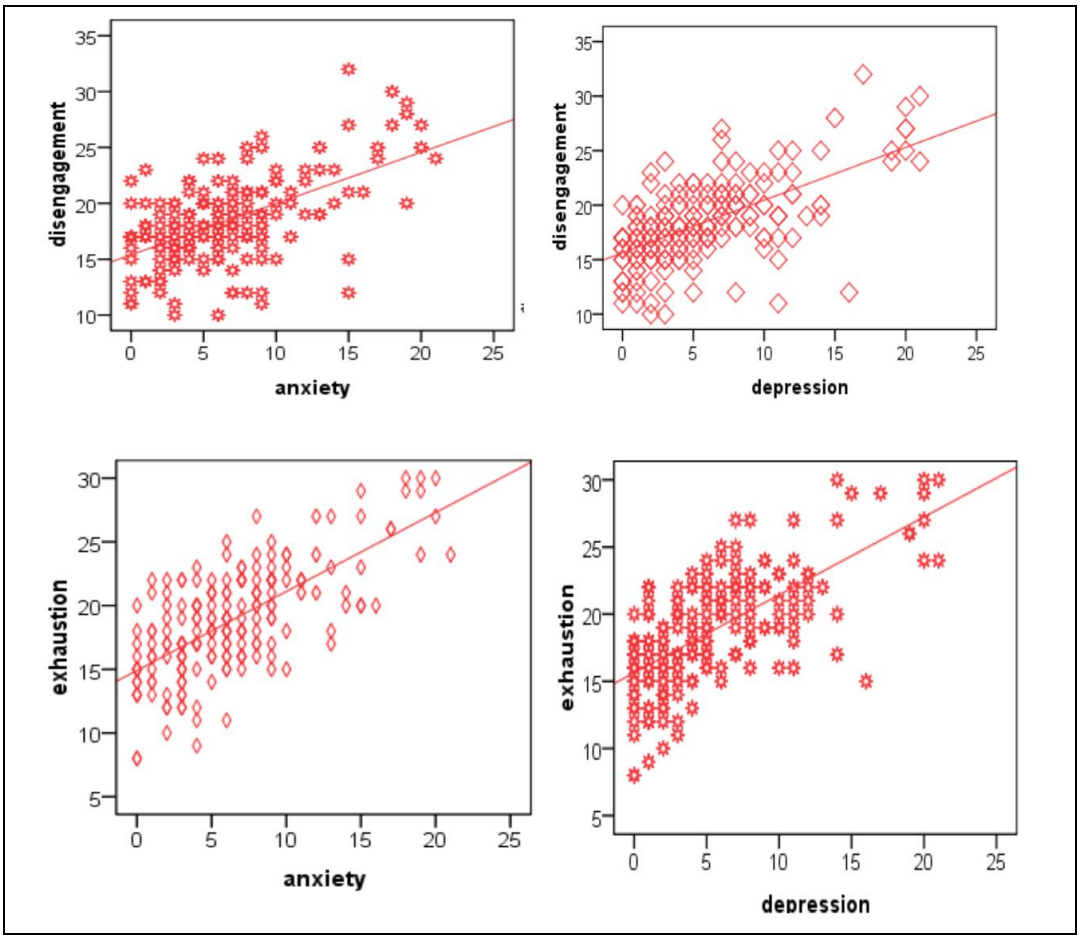

Fig. 1: Scatter plot showing correlation of disengagement, exhaustion vs depression and anxiety

Table 3: Prevalence of somatic symptoms

Total sample =188		N (%)
Sleep disturbance	Never	64 (34.0%)
	Sometimes	81 (43.1%)
	Often	29 (15.4%)
	Daily	14 (7.4%)
Headache	Yes	74 (39.5%)
	No	114 (60.6%)
Neck pain	Yes	50 (26.6%)
	No	138 (73.4%)
Back pain	Yes	72 (38.3%)
	No	116 (61.7%)
Chest pain	Yes	10 (5.3%)
	No	178 (94.7%)
Pain abdomen	Yes	18 (9.6%)
	No	170 (90.4%)
Nausea	Yes	26 (13.8%)
	No	162 (86.2%)

Table 1 depicts association between sociodemographic variables of physicians, presence of anxiety and depression vs four Burn out categories. The four Burn out groups were found to have statistically significant association with age, anxiety and depression. The individual domains p value showed that Disengagement, Burnout and Non-Burnout groups were found to be significantly ($p< 0.05$) associated with HADS anxiety except Exhaustion group.

As shown in Table 2, Pearson's correlation was used to find correlation between disengagement, exhaustion, anxiety and depression scores. While each group correlated significantly and positively with all the other 3 groups ($p<0.01$); disengagement showed stronger positive correlation with depression, while exhaustion showed stronger positive correlation with anxiety.

Table 3 shows presence of different somatic symptoms in physicians. As noted, Sleep disturbances was the most frequent somatic symptom, followed by headache, backpain, neck pain, nausea, pain abdomen, and chest pain.

Discussion

Health care provision can be emotionally and physically challenging leading to high rates of Burn out among health care workers. The serious nature of the profession leaves little margin for mistakes.[15,16] Tight work schedules with overtime and intrusion into personal and family life, and the stress of dealing with ethical issues and complex decision making for patients, result in professional dissatisfaction.[17-21] All these factors can potentially be worsened by the uncertainty and pressure on resources brought on by a health care crisis such as the COVID pandemic.

Research on practicing physicians have shown high Burnout prevalence rates, with one-third of physicians reporting Burnout at some phase in their careers.[22] The Burnout observed among physicians in the current study was 54.3%. Studies have shown Burnout rates during their careers, as high as 54.3% and 45% among professionals and medical graduates respectively.[23-25] A meta-analysis of 22,778 medical residents in 2019, reported that Burn out was seen in one out of every two residents.[26] Another study that systematically reviewed mental health presentations in health care workers during pandemics showed prevalence of Burnout in 34%.[27] In the current study, higher rates of Burnout were noted in age groups 36-45 yrs. and in female gender. This might be due to the expectations from the healthcare system that young doctors to work in frequent shift duties and for longer working hours as the older age group is thought to be at high risk during the COVID-19 pandemic. The high Burnout rates among female physicians might be due to their efforts in balancing their role in the family and hospital.

Emotional health outcomes like depression, anxiety and stress are found to be associated with Burnout.[11,28-30] Repeated Burnout among health care workers make them highly vulnerable to various psychological symptoms such as anxiety, depression, sleep disturbance, weakness and lethargy.[31] Physicians in developing countries are overburdened from shortage of work force, resulting in stress and exhaustion.[32] In the current study anxiety, depression and sleep disturbances was noted in 14.9%, 15.4% and 65.9% respectively among physicians; whereas a similar study that was done in India during COVID -19 pandemic reported 30.9% depression and 39.5% anxiety among doctors.[33] Another study done on health care workers in china during COVID-19 pandemic reported 50.4% depression 44.6% anxiety and 34% sleep disturbances.[8] A systematic review of 115 studies looking into mental health symptoms in health care workers during pandemics showed presence of fear (43.7%), insomnia (37.9%), psychological distress (37.8%), burnout (34.4%), anxiety (29%), and depressive symptoms (26.3%) as the main psychological symptoms.[27] However, when compared to other studies of anxiety and depression in Indian settings, and amongst health care workers from other countries like China during pandemic situations; Burnout, anxiety and depression levels noted in the current study seem to be far less. This could be resultant from a better preparedness of physicians for public health crisis compared to other health care workers. There could have been other factors like illness severity and complications, physician – patient ratio, communication and resource management at the hospitals. Specific to the present study, the higher percentage of physicians were in the younger age group and this could be another reason for the lower Burn out rates. The psychological resilience among youth could be more compared to middle-aged and elderly. Differences in the physician's working conditions like department / specialty, hours of work, place of work, nature of work, pay and availability of personal protective equipment may have influenced the rates of Burn out.

In the present study, disengagement showed stronger positive correlation with depression, while exhaustion showed stronger positive correlation with anxiety. Similarly Ding et al., study has shown that emotional exhaustion is positively related to anxiety symptoms.[34] A systematic review analysis by P Koutsimani et al., has showed

significant association of Burn out with both depression and anxiety.[35]

Such high rates of mental health symptoms and Burn out among physicians working in COVID hospitals, would also call for interventions such as cognitive behavior therapies, problem solving and mindfulness approaches, and existential therapies, if necessary, through tele-psychotherapy, as measures to support physicians working in the midst of COVID-19 pandemic and in the post-pandemic era. A systematic review analysis by Clough et al., showed promising results in reducing stress and Burnout among doctors by implementing behavioral and cognitive interventions.[36] This study highlights the need of the healthcare systems at various levels to act appropriately in designing the working conditions and supportive measures for the physicians who are working relentlessly in managing patients with COVID-19.

There are certain limitations to the present study. The study was limited to COVID hospitals in one particular district and this might not be representative of other hospitals in India. Questionnaires used in the study such as HADS and OLBI have not been validated in an Indian setting. Standard questionnaires were not used for assessing sleep and pain; only single questions related to it were asked. The study questionnaires were circulated through email correspondence which has its own online survey drawbacks and limitations around generalizability. Personality profiles of the practicing physicians were not assessed, which could have given us a better picture of the various physician factors impacting on the levels of Burnout and anxiety and depression. Sociodemographic variables such as marital status, presence of old age persons, children and acquaintance or death due COVID-19 among the family and friends were not included.

Future studies looking into Burnout in physicians with larger sample sizes, and different work settings and specialties are needed. Also, tools to measure Burn-out in an Indian setting and COVID-19 specific situations are further required.

Conclusion

The levels of Burnout and its impact on mental health amongst physicians noted in our study appears high at first instance. Burnout, anxiety and depression levels noted in the current study seem to be far less compared to other studies. Also, it would be generally expected that the Burn out and mental health symptoms in physicians during pandemic times would be higher than usual. One could hypothesize various reasons for these lower adverse mental health outcomes. High percentage of physicians in the present study were among younger age group and the better preparedness of physicians for public health crisis could be reasons. The study highlights the need for implementing the necessary psychological interventions by the health care system to support the physicians during the COVID-19 pandemic in order to protect them from the adverse mental health consequences of Burnout in their workplace.

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Conflict of Interest

None.

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Study of referrals to department of psychiatry in tertiary care general hospital setting

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Abstract
Background: Study of referral pattern to psychiatry helps us to understand the type of patients and the rate of referral from individual departments. It also helps us to understand the need for consultation liaison services (CLP) thereby strengthening the General Hospital Psychiatric Units (GHPU)
Aim: To study the referral pattern to psychiatry in a tertiary care teaching hospital.
Materials and Methods: All referrals to the department of psychiatry for a period of two months were included in the study. Sociodemographic details, reasons for referral and the department from which referred were noted. The Psychiatric diagnosis was made according to the ICD -10 criteria. The overall referral rate to psychiatry and referral from individual departments was noted and descriptive statistics was applied to represent the same.
Results: The overall referral rate to psychiatry was found to be 1.17% with majority being from medical specialities (62%). The most common reasons for referral have been suicidal attempts and most common psychiatric disorder diagnosed among referred has been delirium.
Conclusion: The low levels of referrals to psychiatry emphasize the need for better consultation liaison services.

Keywords: Referrals, Consulatation-liasion, General hospital psychiatric units.

Introduction
Psychiatry has come a long way as a medical discipline, despite the challenges posed by stigma and superstition.[1]

The evolution in the understanding of mental illness is shown by the fact that the treatment setups for patients with mental illness has changed from asylums, to mental institutes and finally to general hospital psychiatry units. Perhaps accepting the fact that mental illness like any other illness needs treatment in a general hospital and that the people with medical illnesses have comorbid mental illness requiring psychiatric intervention. The need for consultation and liaison with other departments has come into sharp focus after the establishment of the general hospital psychiatry units.

The purpose of consultation and liaison is to integrate all information available from all the sources to provide optimal health care in a way that is sensitive to the needs of patients and other specialists.[2]

Psychiatric units in the general hospitals have increased opportunities for such consultation liaison services. The role of a psychiatrist in such hospitals is manifold.

Treating patients with psychiatric disorders who have been admitted for the treatment of medical problems, managing patients with medically unexplained physical symptoms or managing patients presenting with acute psychiatric symptoms as a result of an underlying medical condition, all come under the purview of the psychiatrist. A consultation liaison psychiatrist therefore plays multiple roles and it is on him that rests the onus of bringing in awareness in staff of other departments regarding psychiatric disorders by utilising the opportunity during consultation and liaison. Thereby he is a clinician, collaborator, researcher, administrator and teacher.[3]

Despite the high prevalence of comorbid psychiatric disorders in medical conditions, the rate of referral to psychiatry has been low. For instance, the prevalence of depression in medical outpatients in a study done in India was found to be 30%.[4] The prevalence of psychiatric morbidity in postoperative patients was found to be around 27%.[5]

However, the overall rate of referral to psychiatry in India has been shown to be between 0.06% to 3.6%.[6]

A Study conducted in Telangana in a rural teaching hospital showed the referral rate to be 0.18%, of which the referral from medicine and allied branches was 75.7% and surgery and allied branches was 24.3%.[1] Another study conducted in Delhi showed the referral from medicine and allied branches to be 58.46% and surgery and allied branches to be 14.6%.[7]

We undertook the study to understand the referral rate and pattern of referrals in our hospital to the department of psychiatry, which is a tertiary referral centre in the state of Telangana. The study was done for a period of two months from March 1st to April 30th 2019.

Aims and Objectives
Aim
To study the pattern of referrals to the department of psychiatry.

Objectives
To study the sociodemographic profile, clinical characteristics and common causes for referral to psychiatry
To estimate the referral rate to the department of psychiatry.

Materials and Methods
The study was a cross sectional study, done in an 1800 bedded tertiary care referral centre cum teaching hospital in Telangana. The hospital has medical and surgical specialities

and their allied branches to which patients from all over the state visit or are referred.

All the in-patients referred to psychiatry from the other departments of the hospital between March1st to April 30th 2019 willing to give written informed consent and accompanied by a reliable informant were taken in for the study. They were administered a semi-structured proforma which included details of socio demographic features and profile of referrals consisting of source, reason for referral and department from which referred. Psychiatric diagnosis was made as per ICD-10 criteria. A total of 140 patients were included in the study by a method of convenience sampling.

Statistical analysis

Descriptive analysis was computed in terms of mean and standard deviation for continuous variables & frequency with percentage for ordinal and nominal variables. The Statistical package for social sciences version 25 (IBM® SPSS® Statistics, New York, United States).

Results

A total of 140 inpatients were referred to the department of psychiatry over a period of two months between 1st March to 30th April 2019, out of the total 12000 patients admitted in the hospital during this period yielding a referral rate of 1.17%.

Table 1: Sociodemographic variables

Sociodemographics characteristics	**N= 140**	**Percentage (%)**
Age	Mean: 35.30 S.D: 13.46	
Gender		
Male	**92**	**65.7**
Female	48	34.3
Religion		
Hindu	**119**	**85**
Muslim	15	10.7
Christian	6	4.2
Residence		
Rural	**75**	**53.6**
Urban	65	46.4
Education		
Professional	1	0.7
Degree	13	9.3
Inter	17	12.1
High school	26	18.6
Primary	30	21.4
Illiterate	53	37.9
Occupation		
Professional	2	1.4
Semi professional	4	2.9
Clerk	**63**	**45.0**
Skilled worker	3	2.1
Semiskilled	28	20.0
Unskilled	40	28.6
Unemployed		
Socioeconomic status		
Low	**133**	**95**
Middle	4	2.9
Upper	2	1.4

The socio demographic features are summarized in Table 1. Most of the referrals were in the age group of 25-35 years, majority were males (65%) and Hindu by religion (85%) and residing in rural areas (53.6%). Most of the patients were illiterate (37.9%), unemployed (30%) and belonged to low socio economic status (95%).

Table 2: Reason for referral

Disorders	**Frequency**	**Percentage**
Alcohol related disorders	42	30.0
Attempted suicide with poisoning	46	32.9
Sleep disorders	11	7.9
Altered behaviour	7	5.0
Head injury	11	7.9
Psychiatric illness	5	3.6
Others	18	12.9
Total	140	100.0

On analysis of the reason for referral, most common reason was for evaluation of attempted suicide due to poisoning 46 (32.85%), followed by alcohol related disorders 42 (30%). Others included referrals for sleep disturbances, altered behaviour, or simply as psychiatric illness without elaborating the symptoms. (Table 2)

Table 3: Departmental referral

Department	**Frequency**	**Percentage**
Medicine and allied	87	62.1
Surgery and allied	53	37.9

Most of the referrals were done from the department of general medicine and allied branches (62.1%) followed closely by surgery and allied branches (37.9%) (Table 3)

Table 4: Distributions of psychiatric disorders

Psychiatric disorders	**Frequency**	**Percentage**
Delirium	51	36.4
Depression	17	12.1
Psychosis	9	6.4
Intentional self-harm	25	17.9
Others	10	7.1
No diagnosis	28	20.0
Total	140	100.0

Of the 140 patients, a psychiatric diagnosis could be made in 112(80%). The most common being delirium 51(36.4%) followed by intentional self-harm 25(17.8%), depression 17(12.1%).

Discussion

In the present study the referral rate to the department of psychiatry was 1.17%. General medicine and allied branches accounted for 62.1% and surgical and allied branches for 37.9%.

Referral rates in India have ranged between 0.06 to 3.6%.[6]

Studies as early as 1998 have shown the referral rate to be 0.65% with 45% of referrals from medical specialities and 22% from surgical specialities.[8]

Mean age of patients referred in our study was 35.30 years. Western studies have reported more number of geriatric referrals.[9] The rate of referral in the geriatric group in our study was 6.3% in keeping with others studies from India which have reported similar referral rates for geriatric patients(3.3%), possibly due to low awareness of geriatric mental health issues.[10]

Despite the high psychiatric comorbidity in medical and surgical patients[4,5] the referral rate to psychiatry has been low. In order to understand the reasons behind the low rate of referral, non-psychiatric clinicians were assessed in a study about their referral to psychiatry. Majority of those assessed felt that less than 20% of their patients had psychiatric problems and of these only 25% were sent for psychiatric referral. In the same study it was seen that about two thirds of clinicians referred their patients if they felt they would benefit from them, however 29% referred only when patients were over complaining. On being asked about their patients' response to psychiatry referral, half of the treating physicians felt that though the patients agreed, they didn't always keep the psychiatrist's appointment. Whereas the other half felt that the patients agreed reluctantly.[11] Some studies have shown that, of the patients referred to psychiatry, 93.7% actually went for the review which led the authors to conclude that the systemic and referrer factors played a major role rather than the patient factors.[12]

In a country wide online survey of 90 centres in India the most common diagnostic categories that were referred to psychiatry were delirium, substance use disorders, self-harm, and depression.[13]

Our study findings were in keeping with the above findings and the most common psychiatric diagnosis established according to ICD-10 criteria in our study was delirium 36.4%, followed by intentional self-harm 17.9%. This was followed by depression and psychosis. Majority of the underlying diagnosis of delirium was alcohol withdrawal.

A study conducted in Delhi reported higher number of neurotic disorders compared to our study.[7] The reason for low referral could possibly be attributed to the less dramatic presentation of these cases thereby missing the eye of the primary physician and also because only inpatient referrals were studied.

In our study when individual reasons for referral were studied, the most common reason for referral has been suicidal attempt (32.9%). No attempt was made by the referring physician to distinguish between suicidal and non-suicidal self-injury. Previous studies have shown attempted suicide, especially those with pesticide poisoning and hanging to be most frequently referred.[12] The possible reason behind this maybe that the patients with attempted suicide are stabilized in the department of medicine and subsequently referred to department of psychiatry. Studies on intentional self-harm have also shown that majority patients attempting self-harm being referred to psychiatry, however they did not qualify for any previous psychiatric diagnosis nor met any criteria for the same after the injury.[14] In our study also 17.9% were diagnosed as intentional self-harm as per ICD 10 -X 60-84, not meeting criteria for any other psychiatric diagnosis.

Alcohol related disorders were another common reason for referral in our study (30%) and delirium could be diagnosed in 36.4% of the referred patients. Other studies in Telangana also reported most common reason for referral to be acute onset of altered sensorium.[1] Other studies on delirium have shown that the average delay for psychiatry referral was 2.36 days. The factors that were associated with a delay in referral were sleep disturbances, motor retardation, admission in intensive care unit and absence of a past history of psychiatric disorders.[15] These factors are important to understand, as addressing these would prevent unnecessary delay in diagnosis.

The referral rate to psychiatry needs to improve and in order to do so the consultation liaison services also need to improve. In fact studies done on non-psychiatrist clinicians showed that majority (87%) of the doctors believed that they would have been helped if their undergraduate medical training in psychiatry would have been better along with other measures like running of joint clinics and opening consultation liaison psychiatry units.[9] This in turn would reduce the negative perceptions around psychiatry, as surveys have shown that doctors from other disciplines have negative perception about psychiatric ailments such as drug addiction, eating disorders, depression, dementia, and schizophrenia.[16]

Studies done on the prevailing facilities of consultation liaison services in India have shown that majority have an on-call service provided. It was shown however that the more effective model was the hybrid model where a psychiatrist is available in the emergency department. This showed that not only the number of referrals for psychiatric disorders improved, but also the medical disorders having comorbid psychiatric illnesses.[17]

Therefore strengthening consultation liaison services by running joint clinics and conducting interdepartmental seminars, training of staff to detect psychiatric disorders early and finally increasing exposure to psychiatry in undergraduate training will go a long way not only to increase knowledge about psychiatric illnesses but also improve referrals to psychiatry, thereby ensuring a holistic treatment of the patients.

Conclusion

The low rate of referral in our study has highlighted the need for extensive consultation liaison service.

Limitation and Future Directions

A small sample size, study of exclusive inpatient referrals and short duration of study have been our major limitations.

Further study into the knowledge and awareness of the physicians of psychiatric disorders and evaluation of various factors causing delay in diagnosis, would help us to understand the reasons for poor referral rate and advocate remedial measures accordingly.

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None.

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Fear of COVID-19: A cross-sectional study among general population in Telangana during lockdown

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Abstract
Background: The Novel Coronavirus-19, emerged from Wuhan, China, spread throughout the world. This pandemic with its influence on each and every aspect of life, posed a much greater impact on mental health. Heightened level of anxiety, fear of contracting the virus, future uncertainties are commonly seen among general population during pandemics.
Aim: To assess the fear of COVID-19 among general population of Telangana during lockdown period in India.
Materials and Methods: An online survey was conducted using Google Forms. Fear of Covid-19 scale was used for assessment. Non probability snow ball sampling technique was used for collecting data.
Results: A total of 245 responses were received, of which 10 responders had pre-existing psychiatric illness and were excluded. Of the remaining 235 participants, 47.2% were females and 52.8% were males. Mean age was 31.46 ± 9.82 years. 54% were educated till post-graduate level. 51.1% were married. 32% were health care professionals and involved in essential care services. The mean score of Fear of Covid-19 scale was 14.27 ± 4.29. 74.9% participants had fear of Covid-19. 61.7% felt uncomfortable when thinking about the novel Corona virus. More than 39.6% candidates were distressed on hearing/watching news about Covid-19. Around 13% participants reported disturbance in their sleep due to worry of getting infected with Corona virus. Findings imply that there was fear of Covid-19 spread among general population of Telangana during lockdown period.

Keywords: COVID-19, Fear, Lockdown, Pandemic, Telangana.

Introduction
The novel corona virus probably started its spread in December 2019, from a sea food market in Wuhan China.[1,2]

WHO declared it as a 'Public Health Emergency of International Concern' on 30th January 2020 due to its rapid spread across the globe.[2] The state of lockdown was applied to many parts of world. On 24th March 2020, Government of India ordered a nationwide lockdown for 21days, limiting movement of the entire 1.3 billion population, as a preventive measure against the spread of the virus.[3] The COVID-19 virus pandemic and the resulting lockdown globally, has had a severe impact on multiple facets of day to day life, functioning and mental health.[2]

According to Ministry of Health & Family Welfare (MoHFW), hearing about COVID-19 from various sources can give rise to fear, anxiety, panic.[4]

The emergence of COVID 19[5] and its pandemic nature has exacerbated fears worldwide. The affected individuals also experienced stigma, in the form of discriminations, labelling, stereotyping and negative behaviours.[6]

On 18th March 2020 WHO has emphasised concerns relating to mental health issues, to reduce stigmatisation arising during COVID 19.[2,7] According to a survey done among 130 countries by WHO, Corona virus pandemic has disrupted mental health services in 93% of countries worldwide, while demand for mental health is increasing.[8]

This study was done to assess the fear of Covid-19 among general population of Telangana, and was conducted during first phase of lockdown period, to increase awareness.

Materials and Methods
The study was a cross sectional, observational study. Non probability snow ball sampling technique was used. An online questionnaire consisting of socio-demographic details and Fear of Covid-19 scale, was developed using Google forms.

Inclusion criteria
Persons ≥ 18 years of age and those who could understand English.

Exclusion criteria
Participants with a history of psychiatric illness.

The study was started after obtaining approval from the Institutional Ethics Committee. Data collection was initiated from 15th April 2020, during first phase lockdown period in India, Online forms were available for a period of 30 days. Data collection was concluded after the allotted time period of 30 days.

The questionnaire was divided into two sections, with a consent form attached. The link of the questionnaire was circulated through sms, e-mail, WhatsApp and other social media applications. The participants were encouraged to roll out the survey to as many contacts as possible. After clicking on the link, the participants were directed to a page describing the study, and assuring them of the confidentiality of the data, along with the attached consent form.

After taking an informed consent, a set of questions would appear, which the participants had to answer.

Provisions were made to ensure only one response per question.

First section consisted of sociodemographic variables like age, gender, qualification, occupation, involvement in essential services. It also included medical history and history of pre-existing psychiatric illness. Responses of those with pre-existing psychiatric illness were excluded from the study, before analysis. Fear of Covid -19 scale (FCV-19), was used in the second section. It is a seven item scale and is a reliable and valid tool for assessing fear of Covid-19 among general population. It has an Internal consistency [α= 0.82] and test retest reliability [ICC=0.72].[9] Though the scale was created by Iranian researchers, the authors felt that the questions were generic/non specific and could be applied to other populations as well.

At the end of questionnaire, candidates were requested to click on Submit option, for proper submission of their form.

All the questions were in multiple choice format, and the responses were rated on a 5 point Likert scale.

Data was entered in Microsoft excel and analysis was done using SPSS version 20. Descriptive statistical analysis was done. Results on continuous measurements are presented as Mean and Standard Deviation

Results on categorical measurements are presented as Percentages.

Significance is assessed at 5% level of significance ($p < 0.05$ - statistically significant).

Student t test (independent, two tailed) has been used to find out the significance of study parameters on a continuous scale between two gender groups.

Analysis of Variance (ANOVA) has been used to find out the significance of study parameters on a continuous scale between three and more age groups.

Results

An online survey, related to fear of Covid-19, was conducted among general population of Telangana during lockdown period in India.

Socio-demographic details

Total of 245 responses were received, from various parts of Telangana. 10 participants had pre-existing psychiatric illness, and were excluded. Thus, result was analysed for a total of 235 participants. The youngest participant was 18 years old and eldest was 79 years old. Mean age was 31.46 ± 9.82 years. (Table 1)

The gender ratio of respondents was almost equal (Males were 52.8%, Females were 47.2% (Fig. 1, Table 2). 51.1% of participants were married (Fig. 2, Table 2).

Minimum qualification was Class 12th and the maximum was post graduation. 40% of the participants were graduates and 54% were Post graduates. (Table 2)

31% of the participants were health care professionals and involved in Frontline services. (Table 2)

51.5% and 17.4% participants were residing in nuclear and joint families respectively (Fig. 3, Table 2).

II) Fear of Covid 19 scale (FCV-19):

FCV-19 scale, a seven item scale, has robust psychometric properties.[9] It is a five item Likert type of scale, scores ranging from 5 to 35. Higher the score, greater the fear of Covid-19.[9]

74.9% of participants were afraid of COVID-19 (Fig. 4, Table 3), while 61.7% felt uncomfortable thinking about the novel Corona virus (Fig. 5, Table 3). 5% of the candidates developed tremors or sweating in their hands when they thought about Corona virus. (Fig. 6, Table 3). 12% of the participants reported increased autonomic activity (like palpitations) whenever they thought about getting infected with Covid-19. (Fig. 7, Table 3)

39.6% candidates became nervous/anxious, restless on hearing about or watching news about COVID-19 on social media (Fig. 8, Table 3). 12.7% participants complained about sleep disturbances (Fig 9, Table 3). 23.8% were afraid of losing their life because of the disease. (Fig. 9, Table 3)

Overall mean score for this questionnaire was 14.27 ± 4.29. The mean fear of COVID-19 (FCV-19) score in Males was 13.81 ± 3.91 (Table 4). Whereas, the mean FCV-19 score for Females was 14.78 ± 4.65 (Table 4, Graph 1). Student t test and ANNOVA were used to study the fear of COVID 19 between 2 or more than 2 groups respectively.

Using student-t test, it was ascertained that the mean fear of COVID-19 (FCV-19) score in Females (14.78 ± 4.65) was not significant higher than that of males. (13.81 ± 3.91), with p value 0.084 (Table 5).

For determining age wise distribution and fear of Covid-19 score, Analysis of Variance (ANOVA) was used. The mean FCV-19 score was highest in 71-80yr age group (79.00) and least in less than 20year age group (19.25 ± 0.96). There is no statistical significance observed between age distribution and mean FCV-19 scores. (p=0.669) (Table 6)

Discussion

Fear is an emotion induced by perceived danger or threat, which causes physiological changes and ultimately behavioural changes. Though fear is a common psychological outcome during pandemics, the COVID-19 pandemic is a continuously evolving disease outbreak and has unique risk factors.[10] Therefore, fear related to COVID-19 might manifest in not only fear and anxiety related to disease contraction and dying, but also associated socio-occupational stress. This has had an impact on emotional wellbeing and mental state of individuals.[13] The community has faced multiple challenges due to the Pandemic and the safety measures like lockdown.[11-13] Experience from epidemics like SARS-CoV in 2003, MERS in 2012, Ebola in 2017 has shown us that these outbreaks can result in fear, anger, anxiety and loneliness.[14] In the COVID-19 pandemic, as in other pandemics,[16] fear, anxiety, depression, worries and post-traumatic stress disorders have been the major psychological consequences among general public, health care workers[17] and survivors.[15,18,20] COVID-19 related fear, mortality rates, unemployment, protective strategies have become the most searched topics in Google search history.[10,19]

COVID 19 had widespread impact on economy, mind-set, day to day life of most individuals.[20] Fear and anxiety related to epidemics and pandemics also influence the behaviour of people in the community.[20]

Researchers have used the expressions "fear of COVID-19"[9] and corona phobia[21] to indicate the fear of contracting COVID-19.

Corona phobia[10,21] is defined as an excessive triggered response of fear of contracting the virus causing COVID-19, leading to accompanied excessive concern over physiological symptoms, significant stress about personal and occupational loss, increased reassurance and safety seeking behaviours, and avoidance of public places and situations, causing marked impairment in daily life functioning.[10]

Using Fear of Covid-19 scale (FCV-19S), we found out that, 74.9% (Fig. 4, Table 2) had fear of COVID 19 and more than 39% (Fig. 8, Table 2) felt stressful on watching or hearing news of COVID 19 in any form of media. Thus, portraying the importance of media, and their impact over mental health of society.

Table 1: Mean age of participants

Socio-Demographic Details		
S. No.	**Items**	**% of responses (N=235)**
1	Gender	
	Male	52.8% (N=124)
	Female	47.2%(N=111)
2	Education	
	Intermediate	6% (N=14)
	Graduation	40% (N=94)
	Post- graduation	54% (N=127)
3	Occupation	
	Health care	31.6% (N=74)
	Employee (private/government sector)	35% (N=82)
	Business	5% (N=13)
	Student	10% (N=26)
	Homemaker	5% (N=10)
	Others	13.4% (N=30)
4	Marital status	
	Married	51.1% (N-120)
	Unmarried	47.2% (N=111)
	Widow/Widower/Divorcee	1.7% (N=4)

Table 2:

Mean	**N**	**Standard Deviation**
31.46	235	9.82

Table 3:

Fear of Covid-19 scale (FCV-19)		
S. No.	**Items**	**% of responses who had fear of Covid-19 (N=235)**
1	Afraid of corona virus	74.9%
2	Uncomfortable to think about corona virus	61.7%
3	Tremors or sweating in hands when thinking about corona	5%
4	Palpitations when thinking about getting infected with Corona	11.5%
5	Nervous/anxious on watching news and stories about corona virus	39.6%
6	Disturbance in sleep	12.7%
7	Afraid of losing life because of Corona	23.8%

Table 4: Mean FCV-19 score Gender wise distribution

Gender	**Frequency**	**Mean**
Males	124	13.81 ± 3.91
Females	111	14.78 ± 4.65

Table 5: Gender co-relation and mean FCV-19 scores

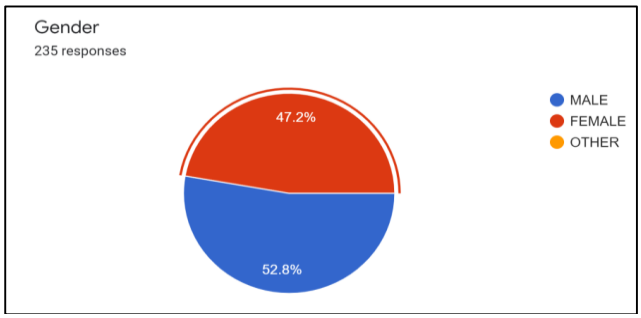
Parameter	Males	Females	P value
Mean FCV-19 scores	13.81 ± 3.91	14.78 ± 4.65	0.084

(FCV-19: Fear of Covid-19)

Table 6: Age distribution and mean FCV-19 score

Age distribution	N	Mean FCV-19 Score	Standard Deviation	P value
< 20 Years	12	19.25	0.96	0.669 NS
21-30	139	26.50	2.32	
31-40	45	33.73	2.75	
41-50	27	46.11	2.84	
51-60	8	55.75	3.10	
61-70	3	63.00	1.00	
71-80	1	79.00	0	

(FCV-19: Fear of Covid-19; NS: Not significant)



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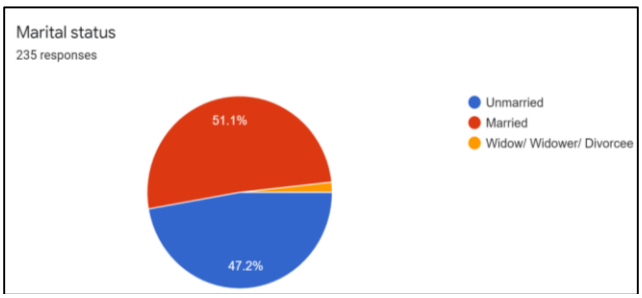

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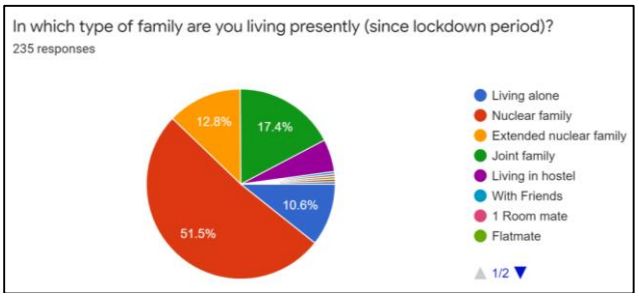

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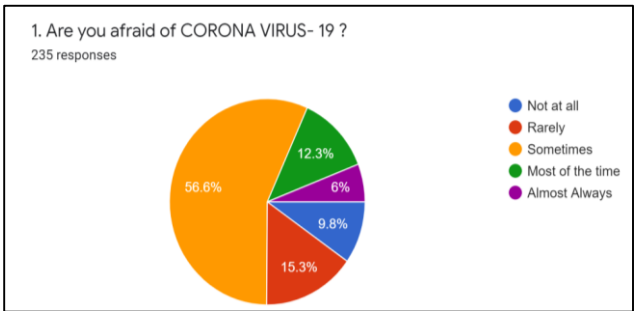

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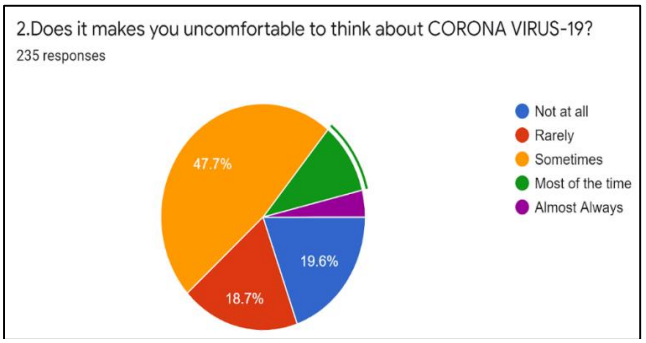

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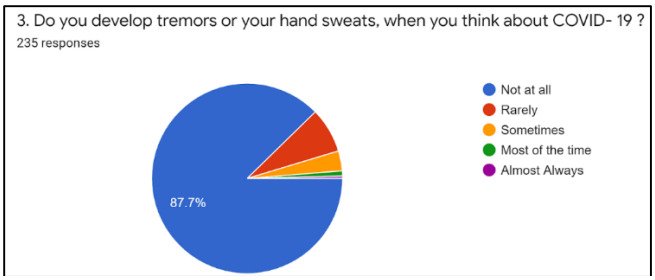

Fig. 6:

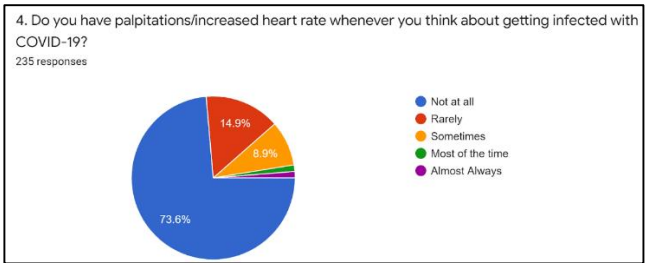

Fig. 7:

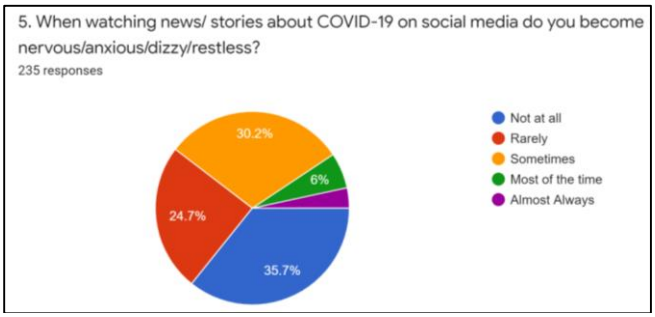

Fig. 8:

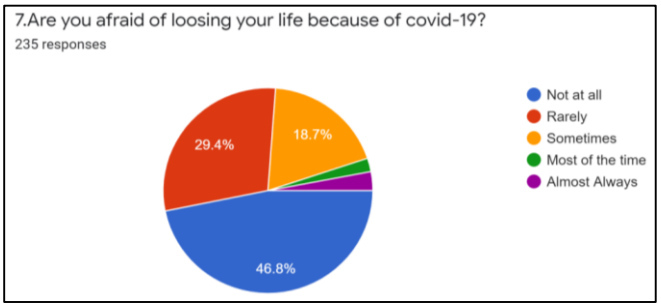

Fig. 9:

Limitations

1. This study was limited to people who used smart phones, mobile applications, computers and other relevant electronic gadgets.
2. Participants who knew English language could only participate.
3. Participants were restricted to the state of Telangana.
4. Participants were not required to specify area of residence. Hence association between fear of COVID-19 in urban vs rural population could not be assessed.
5. The survey was conducted over a short period of time.

Conclusion

The present survey suggests that there was fear of the novel Corona virus among general population of Telangana. Maladaptive levels of fear about Covid-19, has a huge impact on various aspects of daily life and can cause an emotional toll. Getting help from mental health care experts when needed, can ensure the psychological well-being of individual and society. The results would also help the policy makers in designing appropriate campaigns. It would also help if our medical colleagues could spread awareness about the disease so as to allay the fears, remove stigma and promote preventive measures.

Conflict of Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and /or publication of this article.

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Infective endocarditis presenting as depression: A case report

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Abstract
Psychiatric disorders occur in many neurologic conditions like stroke and may be the only initial presentation, especially if the lesion involve left frontal region. Cardiac conditions like Infective endocarditis can result in embolism, which can lead to neurological complications which are the major prognostic determinants as it causes significant morbidity and mortality. Physical manifestations of the patient can be subtle. Hence caution needs to be taken to conduct a thorough physical examination even in young and seemingly healthy patients who present with psychiatric symptoms.

Keywords: Infective endocarditis(IE), Depression.

Introduction
Incidence of Infective endocarditis(IE) in western countries is 1.7 to 6.3 per 100000 person years with a 1 year mortality of 40% while definitive incidence is unpredictable in India.[1] Among Indian population, younger age and male gender are more prone though mean age of incidence is increasing.[1] Streptococci and staphylococci together cause 60-80% of IE[1,2] but Streptococcus Viridans alone accounts for 30 to 65% cases of Native Valvular Endocarditis(NVE).[1] The clinical features are characterized by a triad of heart murmur, fever and splenomegaly.[1] The classical peripheral manifestations includes petechiae, splinter hemorrhages, Oslers Nodes and Janeways Lesion.[1] Embolic phenomena is a major complication and occurs in 10-35% cases, especially in left sided IE.[3] High morbidity & mortality rates are associated with these complications.[3,4] Stroke caused by IE accounts for 1.7% of all strokes[5] and occurs in 16 to 25% of IE patients.[6] Studies reports that stroke can occur 1 to 4 months before and peak within 1month period after making the diagnosis of IE.[6] Manifestations can be neurological in 20–40% and psychiatric in 10-15% cases.[4] Depression occurs in 25 - 32% of strokes [7,8] and may be the only initial presentation. This case highlights the importance of detailed physical examination even in healthy patients who present with psychiatric symptoms.

Case Report
35 year old, 12th completed, house wife, Y, from middle socio-economic status pre- morbidly well-adjusted with no history of medical co-morbidities like diabetes, hypertension, thyroid disorders and not on any regular medications with no precipitating factor presented with complaints of feeling sad, crying spells, decreased talk, decreased interest in daily activities, easy fatigability, death wishes, feeling hopeless and worthless, impaired sleep and weight loss for 4 months. She developed walking difficulty 1½ months after depressive symptoms began. There is no past history of depression, head injury, substance use and premenstrual dysphoria.

There is no history of intellectual impairment, impaired sensorium, self-neglect and violent behaviour.

A plain CT Brain done in another hospital showed normal. She was referred to a psychiatrist by the clinician and was treated for severe depression with Escitalopram 10 mg and Clonazepam 0.5mg for over a month, but symptoms persisted. Later, she developed paraesthesia of limbs, difficulty in getting up and headache and hence was referred to PIMS and got admitted under Neurology. Initial examination revealed depressive symptoms on MSE and detailed physical examination revealed signs and symptoms of IE. Findings on physical examination were raised JVP, Pallor, Clubbing, Mild Bilateral Pitting pedal oedema, Splinter haemorrhages in left great toe (Fig. 1), Janeways spot lesions, hypertonia and Brisk DTR on right side, pansystolic murmur in mitral area. MSE revealedill-kempt appearance, looking gloomy, crying spells, decreased PMA, decreased speech, preoccupied with walking difficulty, depressive cognition(+), death wishes (+), depressed mood, intact cognitive functions, grade 3 insight. Investigations showed Haemoglobin - 10.7g%, ESR -115 mm/hr, CRP: 9.17 mg /dl. MRI Brain (Fig. 2): A small well defined lesion in left high frontal regions with contrast enhancement suggestive of Cavernoma/ Tuberculoma; A well-defined altered signal intensity lesion in left high frontal region adjacent to above lesion with blooming suggestive of late sub-acute hematoma. CT Brain (Fig. 3): An ill-defined hypo density in left high frontal regions suggestive of sub-acute infarct with resolving haemorrhagic transformation –? Secondary to septic emboli. ECHO: Dilated LA, MVP with Severe Eccentric MR, TVP with TR, Vegetation (15 x 9 mm) seen on AML, Moderate PAH, No RWMA, Good Biventricular Systolic function. Blood culture revealed Streptococcus viridans. Patient was treated with IV Ampicillin, IV Gentamicin. Mitral valve replacement was done. Patient was diagnosed with severe depression without psychotic symptoms and was treated with Escitalopram15mg and Clonazepam1mg which were continued for 1 ½ months, depressive cognitions and death

wishes subsided. Patient has no residual focal neurological deficit and is currently maintained on cardiac medications.

Fig. 1: Splinter hemorrhages in left great toe

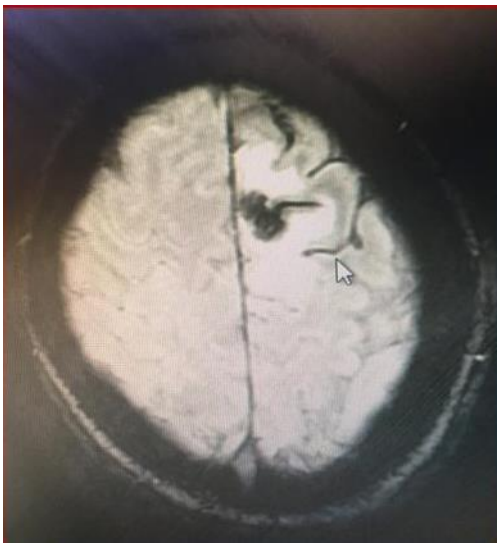

Fig. 2: MRI Brain: A small well defined lesion in left high frontal region

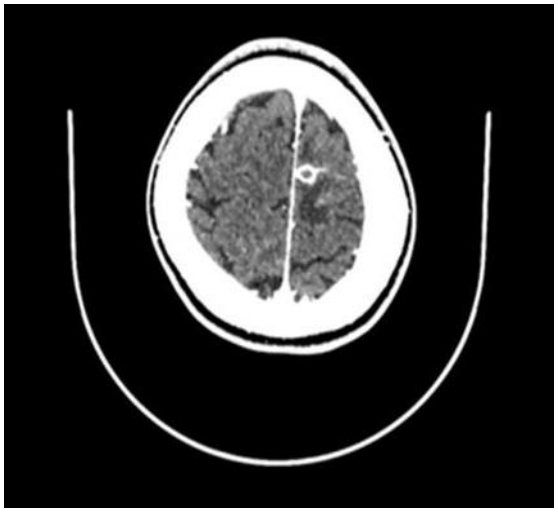

Fig. 3: CT Brain: An ill-defined hypo density in left high frontal region

Discussion

Cardio embolic stroke accounts for a majority of cerebral infarctions and IE is one of the major causes.[3] Studies report high risk of stroke in Infective endocarditis.[5,6,9] The stroke can be subtle, or the so called Silent brain infarct(SBI).[10] Many studies report SBI to be closely associated with cardiac illness.[10] Prevalence of SBIs is reported to be 10-20%.[10] Studies report that most likely vegetation to embolize are those measuring ≥10mm in size and those located on anterior mitral valve leaflet as in the case of our patient.[4,6] Diagnosis of infective endocarditis per se may be made only months after the occurrence of emboli[6] and in some patients the only initial presentation may be depressive symptoms. Numerous psychiatric conditions have been linked to SBIs including mood disorders and dementia.[10] Major depressive disorder has been noted in 20% of patients with cardiovascular disease and40 to 50% of patients with SBIs.[10] Our patient had a lesion in left high frontal region which concedes with studies that suggests that depression is more common in left frontal strokes which is associated with left hemispheric hypoactivity and hypometabolism.[7] Left hemisphere processes pleasurable experiences and decision making, and its attenuation was reported to lead to anhedonia and indecisiveness because of lower serotonin binding in left hemisphere strokes.[7] Also in left hemisphere stroke, there is relative hyperactivity of right hemisphere which processes negative emotions, pessimistic thoughts and unconstructive thinking styles leading to depressive cognition.[7] Left dorsolateral prefrontal cortex and left frontal pole has also been implicated in depressive disorders.[7]

To conclude, psychiatric disorders like depression occur in many neurologic conditions like stroke and may be the only initial presentation, especially if the lesion involve Left frontal region. Neurologic complications are major prognostic determinants of infective endocarditis as it causes significant morbidity and mortality. Hence caution needs to be taken to conduct a thorough physical examination even in young and seemingly healthy patients. This also highlights the significance of neuroimaging and consultation liaison in psychiatric practice.Timely detection can help save life as well as improve its quality as happened in our patient's case.

Source of Funding

None.

Conflict of Interest

The authors declare that there is no conflict of interest.

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Ethnoreligious identity conflict in a Malaysian patient with borderline personality disorder, a psychodynamic psychotherapy case report

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Abstract
Borderline Personality Disorder is a heterogeneous disorder involving mood dysregulation, impulse control, interpersonal relationships and identity. The feature of identity confusion can become complicated in a society with multiple ethnoreligious backgrounds, including Malaysia. This case report describes a 24-year-old Malay Muslim lady with Borderline Personality Disorder and persistent depressive disorder who struggled with her identity due to the mixed ethnicity of her parenthood. The patient achieved full functional recovery after undergoing 15 sessions of Psychodynamic Psychotherapy, which helped her to resolve her identity confusion. The dynamic of identity disturbances was discussed from the perspective of psychodynamic interpretation.

Keywords: Identity confusion, Ethnoreligious, Multi-culture, Borderline personality disorder, Psychodynamic.

Introduction
Borderline personality disorder is a heterogeneous mental disorder characterized by a pervasive pattern of instability in affect regulation, impulse control, interpersonal relationships, and self-image. Epidemiologically, this disorder affects 6% of the general population, with a prevalence of 10% of psychiatric outpatients, 20% of inpatients and 5.9% of individuals do not seek psychiatric help.[1] This poses significant burdens to the healthcare system as they are associated with severe psychosocial impairment and comorbidities.[1] Traditionally, borderline personality disorder has been seen as a chronic condition with poor prognosis, however, recent studies have shown that the understanding and treatment of this personality has significantly improved and thoroughly researched, giving hope to clients suffering from this illness.[1,2] There are many therapies dedicated for the treatment of borderline personality disorder, each having its theoretical framework, however, there is little empirical guidance to show that one therapy is superior to the other.[2]

Other components of borderline personality disorder (e.g. affective dysregulation) has been frequently studied.[2] Identity disturbance, however, can be tricky in regards to management especially in a society with various ethnic, cultural, and religious backgrounds. An individual's identity is linked to religion, ethnic and family identity.[3] To date, there is limited literature examining the influence of multicultural family background in the identity conflict of borderline personality disorder. This case report discussed the challenges faced by this patient on her ethnoreligious identity which had influenced her psychodynamic treatment direction.

Case Report
AD was a 24-year-old married lady with no family history of mental illness. She presented to the psychiatric clinic after accidentally injuring her husband during a self-harming attempt. AD suffered from chronic low mood and irritability since young, associated with occasional fatigue, insomnia, hopelessness and low self-esteem. In addition to that, since her childhood AD had been struggling with her identity, chronic feelings of emptiness, regular anger outburst, and difficulty in managing her emotion. She had been impulsive in different aspects of her life, including spending, together with repetitive self-injurious behaviour as a mechanism to physicalize her emotional pain with occasional suicidal ideation under stress. Her interpersonal relationship had been turbulent, which was reflected by her struggle with two of her past romantic but abusive relationships. There was an intense fear of abandonment in her. There were no features of bipolar disorder, psychosis or substance abuse.

AD is the eldest in her family. She had a poor relationship with her father compared to her mother. She felt her father favoured her younger sister and siblings. Her feelings of jealousy and resentment intensified when she noticed her father played with her younger sister but not her. During her primary school days, the only way she could get her father's attention was when she scored a few distinctions for her examinations to which she was rewarded with material things. She became rebellious during her secondary school days, e.g. selling pornographic material in the school. However, when caught by the school authorities, her father just scolded her and told her that she was a disappointment to him and their cultural values. It was then that she had feelings of chronic emptiness and would impulsively cut her left wrist to release the tension and feel the pain. The sense of hopelessness was always lingering around and this made her felt like "a piece of trash". Although she had occasional thoughts of passive death wish whenever she was under stress, there was no suicidal attempt thus far. She struggled with her body image during the college days where her BMI dropped from 35 to 17 within a year through chaotic food intake, including binging, purging and calorie restriction,

which required three dietitians to help her to acknowledge her eating problem. She was enthusiastic in extreme sports as she enjoyed the adrenaline rush.

Her first two relationships with her boyfriends were short-term but abusive. Each relationship was volatile, filled with trust issues and anger. While in these relationships, she remembers having screaming matches, and always fighting with them. Feeling numb, she would impulsively cut her left wrist to release the stress to 'feel' the pain. Her boyfriends were never faithful while having relationships with other women. Her father disapproved of the relationships, however, she pursued the relationships because she feared her boyfriends would abandon her. Her friends had to convince her to leave these men because she frequently sought medical attention for the abuse from the emergency department. Her third boyfriend, her current husband, was someone she impulsively married because she described him as dependable, stable, mature and 'perfect for her'. He is a personal trainer, eight years older than her. In the early months of her marriage, she said the union was 'magical', however, later on, they started having occasional arguments over finances. She admitted hitting him a few times but he will not retaliate back which frustrated her. The fights would escalate into a fistfight involving knives due to her perceived lack of attention from her husband. She would accuse him of having extramarital relationships despite there being no evidence of such. Her husband reported several instances where verbal argument rapidly escalated to her grabbing a knife to cut herself. After the fight, she would go out with her friends for alcoholic drinks and come back home intoxicated. Her husband, fortunately, remained supportive of her despite all the incidents because they would patch up after the fights.

Another major concern of AD's was her ethnoreligious identity conflict. Her mother is an ethnic Chinese Buddhist Malaysian who converted to Islam after being adopted by an influential Malay Muslim family as part of the legal requirement. Her father is an ethnically Malay Muslim man from a religious and orthodox Muslim family, who admonishes her for not following the religion seriously. Despite her official identity under the Malaysian constitution as a Malay Muslim following her father's ethnicity, she struggled with the identity of being a Malay and a Muslim. She identified better with her mother's Chinese ethnicity, i.e. a Chinese and a free thinker. Her dissatisfaction with the Malay Muslim culture and religion intensifies her dissonance in conforming to them which could not be expressed freely in her family. The struggle became more prominent as she got older and it became friction between her and her father's family conservative approach and her perception that they forced their values onto her.

Physical examinations were unremarkable other than multiple healing laceration wounds over her left wrist. Blood investigations revealed no significant abnormality. She was diagnosed with persistent depressive disorder (PDD) and borderline personality disorder based on DSM-5 criteria, with a probable diagnosis of anorexia nervosa in the past.

She was psychological-minded and motivated to make a change in her life. Her ego-strength was adequate and there was no issue with reality testing. Her Clinical Global Impression scale (CGI) for severity (CGI-S) on the first visit was 4 (Moderately ill).

Formulation and Treatment Plan

AD was prescribed tablet Sertraline 50 mg daily. As part of the psychosocial intervention for AD, collateral history from another family member other than the husband would help in the process of assessment and treatment of borderline personality disorder. Nevertheless, the AD has full capacity and she refused to consent to involve other family members except for her husband.

Short-term psychodynamic psychotherapy (STPP-15 sessions) was started to help her to address her identity issue, improve her relationship with her family, and dealing with her maladaptive defense mechanism. The STPP was constructed in three stages: the first five sessions were induction stage, the middle five sessions were core reflective stage, and the last five sessions were the termination stage.

AD's major conflicts were her conscious awareness of feelings of anger, hatred and jealousy towards family towards her father and her siblings, which included her unconscious wish for absolute love, acceptance and recognition from father and most importantly in terms of her identity, she was lost to where she fitted in. She felt she did not fit in as a Malay.

AD had the following defence mechanism:

1. Splitting (e.g. my mother is 'good', father and sister are 'bad', ex-boyfriends are 'bad, my husband is 'good')
2. Acting out (e.g. being rebellious to get her father's attention and love. There was also the learned behaviour of cutting herself and harming herself when she stressed)
3. Sublimation (e.g. when stressed, she tends to exercise or do extreme sports).

Course of Therapy

'*I am not a normal Malay girl'*, was how AD described herself at the beginning of the session. She wanted to learn about other religions, not just about Islam. In school, she felt uncomfortable wearing a hijab, *baju kurung* (traditional Malay lady clothing) as it was the mandatory uniform for Muslim secondary school girls. Her parents would expect her to be decently dressed and fully covered up by not exposing her *aurat* (private parts as stipulated in the Quran). She considered herself the black sheep of the family. '*I drink wine and celebrate all festivals'.* She identified more with her mother-in-law, a Muslim convert who did not actively practice her religion. '*Her religious status in the identification card is documented as Muslim. But she does not follow'.* Her father's conservative family has always looked down upon her; *'My father's family, they always put me down. Call me the rebellious girl. They cannot accept*

who I am. They want me to be more conservative'. Her cousins would complain to her father about her dressing and she would get scolded by her parents about how she dressed.

She found herself being judged all the time for being open. *'I cannot say that I'm fully Chinese. I cannot say that I'm fully Malay. So basically I'm nowhere.'* She felt Malays have so many rules and regulation which frustrated her. She once put a picture of a family tree of a Greek God on her Facebook. She intended to show that she had read a particular book on the Greek Gods. Her aunt had called her an apostate, which she vehemently denied. '*My aunty likes to make me look bad and make my dad fight with me'*. She took it down to avoid further issues. '*I didn't want any problem so I took it down. It's just knowledge. People don't understand'.*

As an animal lover, she loved dogs, however, her Malay friends chided her for patting a dog once, telling her that it was forbidden in Islam. Her response to that was '*dogs never harm me; why should I hate them'.*

Her relationship with her husband was better compared to her last two relationships. However, her husband voiced out his concerns about her view of culture and religion. '*He is summing up that I am a free spirit that I do not know what I am. As in no cultural identity'.* Her response was '*Religion does not define me. I told him I believe in every religion but I do not follow anything in particular. I'm not an atheist. I'm just trying to understand other religions'.*

Therapy Monitoring and use of Feedback Information

The earlier sessions were targeted on helping AD to shift her understanding on identity to be more flexible and hence accepting her uniqueness. Different analogies were used along the process. The idea of grey areas in culture and religion was inculcated, including the presence of different interpretation and comprehension on the values, which subsequently improve her ability to tolerate disagreement.

Her maladaptive defence mechanisms were being analysed and discussed in detail. She began to be more aware of her extreme idolisation and devaluation on identity, i.e. disagreement does not equate to be a bad character. Instead of responding aggressively to defend one's cause, skills on how to manage a difficult and uncomfortable conversation in the case of conflict was practiced so that she could communicate assertively. Furthermore, skills on how to manage her negative feelings were practiced also in order to manage her anger during a disagreement. AD is defiant, likes to test boundaries regularly and likes challenges. However, her husband helps to contain her disruptive behaviour, attributed to the trust and security toward her husband. This particular positive feature was reflected to her and reinforced during the therapy.

During the mid-session assessment, her CGI-S showed improvement on the 8th session was 3 (Mildly ill) and CGI for Improvements (CGI-I) was 3 (Minimally improved)- there is some symptoms reduction.

The last five sessions were dedicated to the termination of the therapy. The breakthrough came about when her communication has improved and her husband was able to accept her viewpoint. *'My husband told me - I will accept you for who you are. I love you… Don't get me wrong, he still believes in the Muslim God, but you know, he is asking questions and we debate about it. I am happy. He finally understands me. And he explains religion to me, helping me to see the other point of view. I was surprised. No one has ever done that before. It's not all black or white, there is a grey area*'. Her relationship with her family had improved too with her ability to express assertively. *'I think my father and sister realize my worth and realize that I am important to them. I feel lighter. They talk to me properly'.*

Assessment on her last (15th session) showed that her CGI-S was 1 (Normal) and her CGI-I was 1 (very much improved), for the last seven days the symptoms of the disorder were not present and she felt better. Her husband noticed that there were changes in her (i.e. not getting angry fast, more jovial and noticed her relationship with her father and sister had improved). He was happy with the changes and their relationship has improved. Therefore, full functional recovery was achieved at the termination of her psychodynamic sessions. Her oral medication was continued for another six months, completed with a discharge from service.

Discussion

Erikson defines identity as 'accrued confidence in the inner sameness and continuity of one's meaning for others'- dealing with role commitment and consistency in behaviour.[4] Adolescents across many cultures are known to endure a period of identity crisis or identity formation that would play a role in their development psychopathology.[5] The concept of identity disturbance has been the centre of current theoretical frameworks used to understand borderline personality disorder[6] although the nature of this disturbance has received little empirical attention.[7] A confirmed sense of identity leads to healthy relationships and a good role in society with optimum psychological functions, however, a negative identity is a role negatively viewed by the boarder culture.[5,7]

Malaysia is a melting pot of different ethnic, religion, and culture, which include the Malay, Chinese, Indian, and indigenous groups with a different characteristic social-cultural-religion background. Interracial marriages are common and there is some dissonance due to the different cultural and religious practices, given not all religious conversion are allowed constitutionally. Although Islam is the official religion of Malaysia, other religions such as Buddhism, Christianity, Hinduism are commonly practiced among the other ethnics. Religion and spirituality play an important role in Islam. As religion is a major part of a Malaysian's family, it forms a major component of identity development among the Malay.[8] Various studies found that people with good spirituality showed better mental health overall and reported less psychiatric symptomatology e.g. anxiety, depression, suicidality, self-harming behaviour or

substance abuse.[9,10] In a study done by Hafizi et al,[16] the authors postulated that lack of commitment to religious values and norms could lead to identity instability. People with borderline personality traits suffer from poor interpersonal relationships which causes them some difficulty in conforming to religious norms and values. They make group involvement difficult and often get excluded from religious groups.[10]

Conclusion

A culturally-informed therapeutic approach is important in helping borderline personality disorder patients with a complex ethnoreligious background. Although the generalizability of the finding in the case report may be limited, further qualitative and quantitative systematic exploration of the meaning of "identity disturbance" among borderline personality disorder patients from a different ethnoreligious background can be performed to elucidate the implication of cultural component on this psychopathology, which will potentially serve as a training guide for clinical assessment and psychosocial treatment.

With good intelligence, insight, motivation, and a supportive husband, she was able to self-reflect plus expressing her issues freely in the therapy. She appreciated that her husband accepted her as a free spirit, which had liberated her and helped her to repair her relationship with her father and sister. With the culturally-informed psychodynamic therapy sessions, she managed to embrace her complex ethnoreligious identity.

Conflict of Interest

None.

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Amitriptyline induced Galactorrhea: A case report

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Abstract
There have been a lot of documented cases of antipsychotic drug induced galactorrhea or non-puerperal lactation and isolated case reports of selective serotonin reuptake inhibitor induced galactorrhea. Here we are reporting a case of amitriptyline, a tricyclic antidepressant induced galactorrhea and complete resolution when the drug was withdrawn. There are other literature documenting antidepressant induced galactorrhea. This literature here is to support and understand the current trends and mechanism as it is different from what we encounter with antipsychotic.

Keywords: Amitriptyline, Galactorrhea, Tricyclic antidepressant.

Introduction
Antipsychotic induced galactorrhea is a common side effect seen in day to day psychiatric practice. As time proceeded further, more and more case reports are published showing galactorrhea as a side effect of antidepressants also. There are a significant number of documented cases of such due to the use of nortriptyline, fluoxetine, sertraline, escitalopram, fluvoxamine, paroxetine, and others.[1,2] But to our knowledge no significant case report suggesting amitriptyline alone as a cause of galactorrhea has not been published in the recent past. This case report is therefore to draw attention to the possibility of galactorrhea with amitriptyline, a drug that we prescribe very frequently in our day-to-day practice and to promote better judgement in the evaluation of galactorrhea in such scenario, and also as an aid for further researches.

Case Report
A 27 years old young unmarried female patient without any history of past medical or psychiatric illness, presented with complaints of dull aching, vague headache, and burning sensation over the head of mild to moderate intensity for 6 months without associated nausea, vomiting, photophobia, phonophobia, or any discharge from eye, nose or ear. There was no specific aggravating or reliving factor and no past history suggestive of head injury, recurrent sinusitis, visual disturbances, and any other stressors or comorbid illnesses. Along with that, there were complaints of other medically unexplained symptoms. Baseline routine investigations (complete blood count, sugar, urea, creatinine, thyroid profile) were done and reports were within normal limits. So a diagnosis of "undifferentiated somatoform disorder" F45.1 according to ICD-10 was made,[3] and she was started with 10mg of amitriptyline once daily and later it was increased to 25mg once daily after 7 days. Improvement of target symptoms was reported within a month but the patient presented with milk secretion from the breast. There was no associated history of menstrual irregularities, sexual contact, discharge per vaginum, fever, skin rashes, visual blurring, headache, or recent chest wall surgery. The patient was not on oral contraceptive pill and there was no history suggestive of endocrinopathies in the family. Except for bilateral galactorrhea physical examination revealed nothing suggestive. Biochemical investigation revealed a serum prolactin level of 120.33 ng/ml (reference range for normally menstruating women 2.8 - 29.2 ng/ml) and multi-detector computed tomography (MDCT) scan of the brain suggested normal study. Since symptoms started after initiation of amitriptyline, so we stopped it and within a week there was the cessation of galactorrhea and normalization of serum prolactin level to 21.33ng/ml after two weeks. As the patient had residual vague somatic symptoms, she was advised tablet bupropion 150mg daily and no adverse drug reaction was reported afterwards.

Discussion
Whereas dopamine produces a strong inhibitory effect on prolactin release, serotonin plays a stimulatory role in prolactin release by acting on postsynaptic 5-hydroxytryptamine (5-HT) receptors directly in the hypothalamus or indirectly by presynaptic inhibition of tuberoinfundibular dopaminergic pathway via the 5-HT receptor.[4,5] Galactorrhea or non-purulent milky discharge from the breast resulting from antidepressant therapy is hypothesized to be due to that. Before concluding iatrogenic causes of galactorrhea other possible causes such as pregnancy, breast stimulation, sexual intercourse, stress, exercise, causes related to the central nervous system (seizure, tumour, empty sella syndrome, irradiation), systemic disease, or local causes (Herpes-zoster infection, breast surgery) must be ruled out through detailed history, physical examination and necessary investigations.[6]

As antipsychotic induced galactorrhea is a common entity, caution is taken during antipsychotic treatment which is not so common while antidepressant therapy. However more and more emerging isolated case reports of galactorrhea due to use of antidepressant suggests otherwise. Study shows that serotonergic antidepressants (mainly with paroxetine, fluoxetine, sertraline, fluvoxamine, escitalopram) are associated with an approximately eight

times higher risk of galactorrhea compared to other antidepressants.[1,2] Cases of galactorrhea induced by nortriptyline, amoxapine, duloxetine are being reported nowadays. Earlier a case of ovarian cyst formation and lactation following treatment with amitriptyline was reported.[7]

In this case, the temporal relation with the onset and offset of the symptom respectively with use and withdraw of amitriptyline and no presence of all other pathological and psychological causes suggests a drug-induced etiology. Naranjo Adverse Drug Reaction (ADR) scale shows a score of seven suggesting a "probable" drug-induced ADR.[8]

In previously reported cases there was an underlying diagnosis of depressive or anxiety disorder where might be the changes in the hypothalamic-pituitary-gonadal axis precipitated the ADR in patients who were on the therapeutic dosage of antidepressants.[9] But here in this case there are no such probable predisposing factors. In this case, there is an increase in prolactin level also with the use of a single psychotropic medication, Amitriptyline with no other concomitant drug administration that can cause galactorrhea.

Conclusion

Amitriptyline is a tricyclic antidepressant that is widely used by various professionals, not only by psychiatrists but in every field of medicine and surgery. So this case report is to ring a bell and to strengthen the results of previous case reports about the discussed side effect of Amitriptyline for being cautious about using the drug and close monitoring in females of reproductive age group.

Conflict of Interest

None.

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Depersonalization - derealization syndrome: A case report

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Abstract
Depersonalization-derealization syndrome is an under researched clinical phenomenon and is often under diagnosed. We present a case of 42 years old female, who presented with complaining of feeling that her stomach is always empty in spite of adequate food and water intake for the past 7 months. She also reported that all the emotions, bodily movements appeared as if they are not her own. However, reality testing was intact. Phenomenon of primary depersonalization derealization syndrome is relatively rare. Selective serotonin reuptake inhibitors (SSRIs) may be considered as a pharmacological treatment option for the treatment of the condition.

Keywords: Depersonalization, Derealization, SSRIs.

Introduction
Depersonalization-derealization syndrome is an under researched clinical phenomenon.[1] It is defined by feeling detached from own feelings and/or experiences (depersonalization, DP) and/or experiencing objects, people, and/or surroundings as un-real, distant, artificial, and lifeless (derealization, DR) while reality testing remains intact (ICD-10).[2] Patients with depersonalization-derealization syndrome often have difficulty in expressing what they feel and is usually found secondary to other psychiatric conditions. Thus, it is often under diagnosed. We present here a patient with depersonalization phenomenon.

Case Summary
Mrs. I, 42 year old, studied up to 6th standard, home-maker by occupation, hailing from rural background presented to psychiatry out-patient clinic, complaining of feeling that her stomach is always empty in spite of adequate food and water intake for the past 7 months. She describes that she could not experience the sense of fullness after having food or water, as if the content was not going in her stomach. Gradually, she also started reporting that even though she was walking, she could not experience the walking movement. She explains that, these experiences would last from few minutes to an hour and she would be aware about herself and surroundings during such experiences. She could not experience any kind of emotions unlike previously and reported that even though she would laugh or cry appropriately, she felt as if they were not real. She denied thoughts, emotions or actions being under the control of external agency. Her sexual experiences also appeared as if they were not actually happening. Sometimes, during such episodes, she would cry saying that she has lost bodily sensations and all her bodily movements appear as if they were not real. Her sleep was disturbed and she would intermittently express her wish to die as she could not understand about her experiences. However, her self-care was maintained and was able to do her daily activities and look after her children without much difficulty. There was no pervasive sadness of mood, easy fatigability and other symptoms suggestive of a depressive disorder. These experiences initially occurred few times a day and altogether lasted for 1-2 hours per day, but gradually over the next two months they increased to 4-6 hours per day. She was shown to multiple faith healers and there was no improvement. In the 15 days prior to reaching OPD, she asked her family members to kill her as she was unable to experience any kind of feelings and reported that she would be better off being dead. Thus, she was shown to general physician and was referred to our OPD and got admitted in view of suicidal ideas. She has well-adjusted pre morbid personality and there were no other medical comorbidities.

On physical examination, there were no significant abnormalities. On mental state examination, patient appeared anxious but was conscious, cooperative with adequate eye contact. There were intermittent crying spells but rapport could be established. She expressed her wish to die and preoccupation with feeling as if there is nothing in her stomach in spite of adequate food, with intact reality testing. Her judgement was intact with insight 4/6. Neurocognitive functions were also within normal limits. All routine laboratory tests were done and were within normal limits. With the help of neurology department, patient was investigated for any possible organic causes and CT Brain, EEG were done which came as normal study. We confirmed the diagnosis of depersonalization derealization syndrome as per ICD 10 and started her on T. Escitalopram 5 mg, increased to 10 mg over next one week. In view of partial response, it was further increased to 15 mg. Benzodiazepines were given for her sleep disturbances whenever required. Over the next 2 weeks, there was significant improvement in symptoms. She was discharged and on subsequent follow-ups of 6 months duration, she has been maintaining well.

Discussion
In depersonalization phenomenon, individuals feel that his or her own feelings and/or experiences are detached and not his or her own. Fish describes it as a change in the awareness of one's activity where patient feels that he is no longer his natural self.[3] Various etiological factors are quoted such as harm avoidant temperament, emotional abuse and from an

evolutionary perspective, symptoms are considered as a beneficial response to severe stress, which is perpetuated by various personality factors such as low capacities of self-regulation which includes low self-esteem, low affect tolerance, low cohesiveness of the self.[1,4,5] Psychodynamically, it is explained as a phenomenon of mental escape from experiencing anything fully by suppressing emotional experiences.[5] Neuro-imaging and psychophysiological studies support the cortico-limbic disconnection model, postulating that prefrontal inhibition of limbic areas, presumably mediated via attentional mechanisms, impairs "emotional colouring" of perceptions and cognitions in depersonalization-derealisation syndromes.[6,7]

Prevalence rate of the depersonalization- derealization syndrome is approximately one percent in the general population.[1,8,9] However, the disorder is severely underdiagnosed. Further, in the Indian context, secondary depersonalization symptoms had been reported to occur in other psychiatric conditions, and there are very few studies on primary depersonalization derealization syndrome and are mostly case reports.[10] Thus, there is scarce of literature from Indian context. In general, various factors quoted for the less prevalence is that many clinicians are unfamiliar with the clinical picture and consider these phenomenon to be occurring secondary to other psychiatric conditions even if these symptoms are dominating the clinical picture. In the current case report though her predominant mood is anxious, it was secondary to the increasing severity of her primary psychopathology and as there were no other syndromal psychiatric conditions, we diagnosed it as a primary depersonalization derealization syndrome.

Conclusion

Phenomenon of primary depersonalization derealization syndrome is relatively rare. In view of its usual chronic course and relatively resistant to medications, early identification and treatment is necessary. Further, Selective serotonin reuptake inhibitors may be considered as a pharmacological treatment option for the treatment of the condition.

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Case report: Mephentermine misuse and psychosis

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Abstract
Mephentermine is structurally similar to methamphetamine and is banned by world anti-doping agency due to its abuse as performance enhancing drug. Reports of Mephentermine abuse and dependence are emerging recently in competitive sports which might lead to psychosis and harmful effects. Here we describe a case of Mephentermine misuse in a body builder prescribed by his trainer in gym which led to psychosis. The client showed improvement with parenteral haloperidol and promethazine combination followed by oral haloperidol and motivation enhancement therapy. Our case report highlights the need of effective treatment options and spreading awareness regarding harmful effects among athletes and also need of the vigilance on drugs availability in gym which further emphasizes to concentrate on this area by the policy makers.

Keywords: Mephentermine abuse, Gym trainers, Psychosis, Dependence, Performance enhancer.

Introduction
Mephentermine is a member of amphetamines with structure similar to methamphetamine and IUPAC name *N*, 2-dimethyl-1-phenylpropan-2-amine. It mainly acts by inhibiting monoaminoxidases A and B.[1] Traditionally used as a vasoconstrictor to maintain blood pressure in cases of hypotension during spinal anesthesia in patients undergoing elective caesarean section procedures and pregnancy.[2] Both mephentermine and phentermine are stimulants whose use is prohibited by the World Anti-Doping Agency (WADA).[3] Nowadays it is restricted to veterinary use for fatigue, anemia, malnutrition and recovery from infectious and parasitic diseases.[4] Mephentermine along with other anabolic steroids has been misused by athletes of age group 20-30 years to increase performance and endurance.[5] On review of literature, we have found case studies like Mephentermine dependence with psychosis[6] and without psychosis.[7] As number of cases of Mephentermine are increasing due to poor vigilance by government management protocols are not clear, hence proper guidelines shall be drafted.

We present a case of Mephentermine misuse with psychosis which is first of its kind in south India

Case Presentation
Mr X a 26 year old married male who is a competitive body builder by profession hailing from urban area of Telangana state with no past history of mental illness and history of mental illness in paternal grandfather presented to Retreat hospital, Hyderabad in the month of November 2020. He reports occasional use of alcohol with friends starting at the age of 18 years and no history of smoking or other substance use. He took body building as a profession at 19 years of age, initially he tried naturally as there was no progress, on advice of the senior trainers he started using anabolic steroids regularly for gaining muscle mass following which he had won three district and one state level medals at the age of 24 years. He continued using them for one more year due to which he gained lot of weight and reached body mass index of 30. He had complaints of sleep impairment and emotional dysregulation at that time. Later in October 2019 he decided to train in calisthenics for which the required body fat should be under 10%. In order to attain that, with advice of his senior trainers he started Mephentermine which he procured from local pharmacy. Initially he used to get administered by his friend who works in nearby hospital as male nurse and later on learnt himself when frequency increased. Following the first IV dose he perceived increased energy, endurance, pleasurable sensation, nerve stimulation, and increased boost for exercise.He started at the dose of 75 mg per day which is a prescription dose among trainers in three divided doses intravenous for almost 4 months. In this duration he reports loss of appetite, impaired sleep, emotional dysregulation and occasionally suspiciousness towards wife. There were no withdrawal symptoms reported in this duration even with dose reduction. He stopped going to other works and spent all his money to procure the drug, he used to lend money from his friends if he doesn't have enough money later sought money from local sponsors. He increased the dose to 100-120 mg per day gradually. He developed more suspiciousness, sleep impairment, irritability, auditory hallucinations, visual hallucinations and suicidal ideations. However our client didn't fulfil diagnostic criteria for dependence. On 11th November 2020 he had a quarrel with wife and attempted suicide by taking almost 500-600 mg intravenous Mephentermine in single dose due to which he developed severe restlessness, auditory and visual hallucinations. He realized that his suicide attempt failed so he jumped from a two storied building and was presented to the emergency room.

On examination he was conscious and oriented, abrasions were seen on right arm and multiple needle puncture wounds on both arms. CNS examination was normal along with neuroimaging to rule out head injury or organic cause.

Cardiovascular examination revealed pulse rate of 110 beats /minute and blood pressure 150 mmHg systolic and

100 mmHg diastolic, echocardiogram was normal. Blood investigations like hemogram, renal function test, liver function test, blood sugars and lipids were normal. Mental status examination revealed depressed mood, paranoia, auditory hallucinations of first and second person type and visual hallucinations.

After admitting him as inpatient we have administered Brief psychiatric rating scale (BPRS) which gave a score of 58. We treated the psychosis with parenteral haloperidol and promethazine. He developed hypotension and was corrected with intravenous fluids. During the course of hospital stay we observed for withdrawal symptoms which he apparently didn't show. We switched to oral haloperidol along with motivation enhancement therapy which showed 80% reduction in BPRS score hence discharged. In outpatient follow up slowly tapered down the dose of haloperidol and continued only on motivation enhancement therapy weekly two sessions for maintenance for which he showed good response and maintaining abstinence.

Discussion

Mephentermine misuse may have significant clinical implications because of its association with psychosis and cardiovascular effects like hypertension, arrhythmias and risk of sudden death.[4]

Our case is first of its kind to be reported in south India. Case report was published from north India in which young athlete had Mephentermine dependence.[8] Mephentermine usage can be seen especially in body building field due to constant need to maintain body endurance. The stress of competitive sports which may lead to the drug abuse and eventually to dependence. In our case client had used low doses of Mephentermine similar to a case report in which gym trainers prescribed Mephentermine to their clients.[9] Our client developed psychosis even with low doses similar to a series of case reports[6] in other hand case reports without psychosis even with high doses were found.[7,10] This can be explained by the higher genetic vulnerability to psychosis in our client. We have given only antipsychotics like haloperidol combining with promethazine to treat the psychosis as another case report suggest use of antipsychotics in treating psychosis.[11] Our client didn't have any withdrawal symptoms during the stay in the hospital. Case report suggests usage of bupropion as the most common drug for withdrawal symptoms.[12] Reports on mephentermine abuse in athletes have been increasing due to lack of awareness regarding potential of dependence and its effects. Our case report highlights the need for availability of resources for drug detection in the body and spread awareness regarding the harmful effects of the drug in common public as well as medical professionals who often come across such cases. Efforts are needed to improve treatment and management strategies. Health care community along with policy makers need to deal with this challenge. We would suggest a strict vigilance and monitoring by government agencies regarding availability of Mephentermine and anabolic steroids in gyms and propose conducting of awareness programmes by government and non-government organizations (NGOS) in gyms regarding misuse of drugs, steroids and their harmful effects to human body. To know the course and outcome of Mephentermine misuse or dependence we suggest further long term studies.

Conflict of Interest

The authors declare no conflict of interest.

Patient Consent

Written informed consent has been obtained from the patient.

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Aaron Temkin Beck

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Abstract
Aaron Temkin Beck (born July 18, 1921) is an American psychiatrist and a professor emeritus in the Department of Psychiatry at the University of Pennsylvania. Beck is noted for his research in psychotherapy, psychopathology, suicide, and psychometrics. He is regarded as the father of Cognitive Therapy. His theories are widely used in the treatment of clinical depression. Beck developed self-report measures of depression and anxiety, notably the Beck Depression Inventory (BDI) which became one of the most widely used instruments for measuring depression severity. He has published more than 600 professional journal articles, and authored or co-authored 25 books.
Beck has been named one of the "Americans in history who shaped the face of American Psychiatry" and one of the "five most influential psychotherapists of all time" by *The American* Psychologist in July 1989. He is currently the President Emeritus of the Beck Institute for Cognitive Behavior Therapy set up by him and his daughter, psychologist Judith S. Beck and the Honorary President of the Academy of Cognitive Therapy, which certifies qualified cognitive therapists.

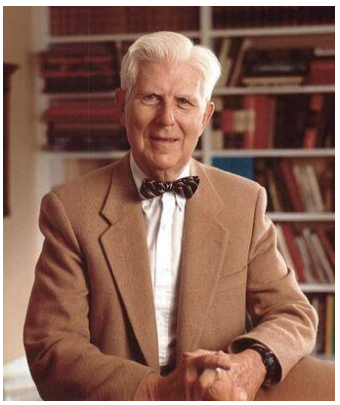
Keywords: Aaron T Beck, Cognitive therapy, Beck depression inventory.

Introduction
Dr. Beck was born in Providence, Rhode Island, United States. He was the youngest of the five children. Both of his parents were Russian Jewish immigrants to the United States. Two of Beck's siblings had died before his birth, an elder brother in childhood and elder sister in the influenza pandemic of 1919. As a result of these tragedies, Beck's mother was chronically depressed for several years and became overprotective of her youngest son. At 7 years of age, he broke his arm that kept him in the hospital long enough that he missed his promotion into second grade. He recalled later that he came to feel "stupid" and "dumb". With the help of his determination, Beck caught up with his studies and was promoted a year ahead of his classmates. He regarded his success as a psychological turning point. He graduated as the head of his class from Hope High School.[1]

Beck entered Brown University in the fall of 1938. He majored in Political Science and English Literature. He also served as associate editor to the campus newspaper, the Brown Daily Herald. He graduated from the university *magna cum laude* in 1942. Beck won a number of honors and awards as an undergraduate, including the Francis Wayland Scholarship, the Gaston prize for Oratory, and the election to Brown's chapter of Phi Beta Kappa.[2]

Beck went to medical school at Yale University, after graduating from Brown University. He completed his degree in 1946.[2] After receiving his MD; he served a rotating internship followed by a residency in pathology at Rhode Island Hospital. He then decided to specialize in neurology. While he was completing a required rotation in psychiatry during his residency at the Cushing Veterans Administration Hospital in Framingham, Massachusetts, he became absorbed in psychoanalysis.[1]

After completing his medical internships and residencies from 1946 to 1950, Beck became Fellow in psychiatry at the Austen Riggs Center, a private mental hospital in the mountains of Stockbridge, Massachusetts, until 1952. Beck then completed military service as assistant chief of neuropsychiatry at Valley Forge Army Hospital in the United States Military.[3]



Beck was married in 1950 to Phyllis W. Beck, who was the first woman judge on the appellate court of the Commonwealth of Pennsylvania. They have four adult children: Roy, Judy, Dan, and Alice.[1] Beck's daughter Judith is a prominent cognitive behavioral therapy (CBT) educator and clinician, who wrote the basic text in the field. She is President of the non-profit Beck Institute.[2]

Beck received his board certification in psychiatry in 1953, joined the Department of Psychiatry of the University of Pennsylvania in 1954, and completed his graduate training in psychoanalysis at the Philadelphia Psychoanalytic Institute in 1958. In 1961, he developed Beck Depression Inventory. He is the only person to have been given awards from both the American Psychiatric Association and American Psychological Association.[1] He remained at Penn until he retired from active teaching in 1992, when he was appointed University Professor Emeritus of Psychiatry.[2]

Contributions of Dr. Aaron T Beck
Working with depressed patients, Dr. Beck found that they experienced streams of negative thoughts that seemed to pop up spontaneously. He termed these cognitions "automatic thoughts". People with depression will tend to quickly overlook their positive attributes and disqualify their accomplishments as being minor or meaningless. They may also misinterpret the care, good will, and concern of

others as being based on pity or susceptible to being lost easily if those others knew the "real person" and this fuels further feelings of guilt.

Beck's cognitive triad, also known as the negative triad,[4] is a cognitive- therapeutic view of the three key elements of a person's belief system present in depression. Beck proposed this triad in 1976.[5] The triad forms part of his cognitive theory of depression and the concept is used as part of CBT, particularly in Beck's "Treatment of Negative Automatic Thoughts" (TNAT) approach.

The triad involves "automatic, spontaneous and seemingly uncontrollable negative thoughts" about:

1. The self
2. The world or environment
3. The future

Beck began helping patients identify and evaluate these thoughts and found that by doing so, patients were able to think more realistically, which led them to feel better emotionally and behave more functionally. He developed key ideas in Cognitive Behavior Therapy, explaining that different disorders were associated with different types of distorted thinking. Distorted thinking has a negative effect on a person's behavior no matter what type of disorder they had, he found. Beck explained that successful interventions will educate a person to understand and become aware of their distorted thinking, and how to challenge its effects. He discovered that frequent negative automatic thoughts reveal a person's core beliefs.[6]

Beck proposed "the generic cognitive model". He condensed the formulation to "generic quartet". This consists of the stimulus situation, the dysfunctional belief, symptoms of disorder and excessive focus on symptoms, belief, or activating stimulus. Each of the components of the quartet interact with one another so that changes in one, impact the others. He and his colleagues have researched the efficacy of this form of psychotherapy in treating a wide variety of disorders including depression, bipolar disorder, eating disorders, drug abuse, anxiety disorders, personality disorders, and many other medical conditions with psychological components.[7]

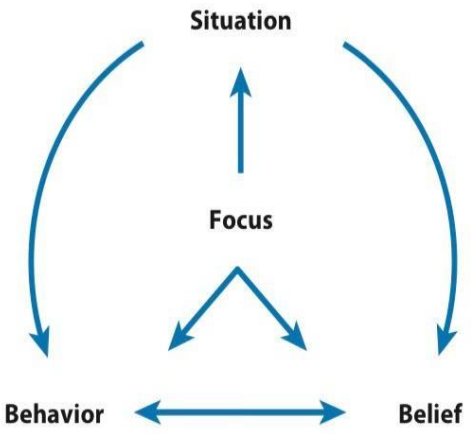


Fig:1:[7]

Beck also believed that a depressed person will, often from childhood experiences, hold a negative self-schema. This schema may originate from negative early experiences, such as criticism, abuse or bullying. Beck suggests that people with negative self-schemata are liable to interpret information presented to them in a negative manner, leading to the cognitive distortions. This explanatory style involves blaming oneself for negative events outside of their control or the behavior of others (personalization), believing that such events will continue forever and letting these events significantly affect their emotional wellbeing.[5]

Positions Held:[2]

1. Beck is the founder and President Emeritus of the non-profit Beck Institute for Cognitive Therapy and Research.
2. He is the director of the Psychopathology Research Center (PRC), which is the parent organization of the Center for the Treatment and Prevention of Suicide.
3. In 1986, he was a visiting scientist at Oxford University.
4. He has been professor emeritus at Penn since 1992.
5. He is also an adjunct professor at both Temple University and University of Medicine and Dentistry of New Jersey.

Questionnaires

1. Beck Depression Inventory (BDI).
2. Beck Hopelessness Scale.
3. Beck Scale for Suicidal Ideation (BSS).
4. Beck Anxiety Inventory (BAI).
5. Beck Youth Inventories.
6. Clark-Beck Obsessive-Compulsive Inventory(CBOCI)
7. BDI–Fast Screen for Medical Patients.
8. Beck collaborated with psychologist Maria Kovacs in the development of the Children's Depression Inventory.

Awards Received:[2]

1. The 7th Annual Heinz Award in the Human Condition
2. The 2004 University of Louisville Grawemeyer Award for Psychology.
3. The 2006 Lasker-DeBakey Clinical Medical Research Award.
4. The 2010 Bell of Hope Award.
5. The 2010 Sigmund Freud Award.
6. The 2010 Scholarship and Research Award.
7. The 2011 Edward J. Sachar Award.
8. The 2011 Prince Mahidol Award in Medicine.
9. The 2013 Kennedy Community Mental Health Award.

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2. Depression: Causes and Treatment (1972).
3. Cognitive Therapy and the Emotional Disorders(1975)
4. Cognitive Therapy of Depression (with John Rush, Brian Shaw, & Gary Emery, 1979).
5. Cognitive Therapy in Clinical Practice: An Illustrative

Casebook (with Jan Scott & Mark Williams, 1989).
6. The Integrative Power of Cognitive Therapy(with Brad Alfred, 1998).
7. Prisoners of Hate: The Cognitive Basis of Anger, Hostility, and Violence (1999).
8. Scientific Foundations of Cognitive Theory and Therapy of Depression (with David Clark,1999)
9. Cognitive Therapy of Personality Disorders(with Arthur Freeman, 2003).
10. Cognitive Therapy with Inpatients: Developing A Cognitive Milieu (with Jesse Wright, Michael Thase, & John Ludgate, 2003).
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Conflict of Interest
Nil.

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Abstract
Dr. Girindra Sekhar Bose, founder of Indian Psychoanalytical society, had a master's degree in Psychology (1917-21), received D.Sc degree in Calcutta University for his thesis 'The concept of Repression'. He sent a copy of his thesis to Sigmund Freud for his comments, their correspondence continued till 1937. It was published by Indian Psychoanalytical Society as a book, uploaded in Freud archive for research purpose, available in French translation (2018). He wrote more than 40 articles, 10 books. He established Lumbini park Mental hospital (1938) for indoor, outdoor treatment of mental patients, started from 3 beds it grew into 80 bedded hospital.

Keywords: Girindrasekhar Bose, Indian psychoanalytical society, Concept of repression.

Life History
Girindra Sekhar Bose (30 January, 1887 – 3 June, 1953), D.Sc, M.B., F.N.L.

He was born on 30th January, 1887 in Darbhanga district of Bihar. He was from a family with rich cultural excellence. His father was, the then Dewan of Darbhanga Raj estate, mother was a poet. His brother Rajsekhar Bose, was a famous writer of Bengali literature. G. Bose was the youngest with four brothers and five sisters. He was amiable in his behaviour and inquisitive since childhood. His academic career was brilliant. He got married, at the age of 17, to Indumati and had two daughters.[1] He was interested in yoga, magic and hypnotism and in fact used hypnotic therapy in his Medical practice during his early years. He did B.Sc. from Presidency College of Calcutta University in 1905, with record marks in chemistry. Then he passed MB examination from Calcutta Medical College in 1910. He got special Permission for appearing in the M.Sc. exam from the University of Calcutta in Experimental Psychiatry in 1917 and stood first in the first class. After passing M.Sc. in Psychology, he joined Calcutta University as a part time lecturer in the department of Abnormal Psychology and twelve years later, he took up the charge of the department. In 1921, he was honored with D.SC. in psychology from Calcutta University. He proposed that many theoretical problems can be solved with his Theory of opposite wishes (1933) and theoretical ego. He was appointed as a lecturer at the age of 31. After he finished his master's degree in two years; he made psychoanalysis compulsory for all students of psychology. He started psychoanalytical society at his residence. He was not only an eminent psychiatrist and psychologist but was also considered as 'THE FATHER OF PSYCHOANALYSIS' in India. Freud was pleased by his ideas; soon he became a member of International Psychoanalytic community, holding the position as the president of Indian Psychoanalytical Society. He started Psychiatry outdoor clinic in 1933. Later, in 1940 a non government mental hospital was started in Kolkata known as 'Lumbini Park Mental Hospital'. He has set up a training school (Bodhayana) for educating normal and abnormal children following psychoanalytic principles in 1949. He established a residential home (Bodhipith) for mentally retarded children in 1951. Being the first student of psychology in India, he laid foundation of psychology in India and world at large. Over a period of 30 years, he created a 'Psychology movement in India', along with his students.

After a prolonged suffering, this great personality died on 3rd June, 1953 in Kolkata.[2]

Contributions
1. He gave the "Concept of Repression" in 1921 blended with Hindu thoughts known as the theory of opposite wishes, which differs from Freudian concept of repression.
2. He explained the importance of castration complex in the resolution of Oedipus complex which differed from that of Freud.
3. He pointed out some of the cultural variations in psychoanalytical concepts such as Castration anxiety which he encountered in Indian patients
4. He started Indian Psychoanalytical Society with fifteen members (nine were college teachers of psychology, five belonged to medical corps of the Indian army)
5. He was involved in establishing organizations such as Indian Association of Mental Health (1928), Indian Psychoanalytical Institute (1936).
6. He started a psychiatry outdoor clinic (1933), later non-government mental hospital (1940).
7. He has set up a training school (Bodhayana) following psychoanalytical principles, a residential home for mentally retarded children. (Bodhipith).
8. Under his leadership, there were many new approaches in the department of Psychology in Calcutta University such as introduction of psychology as a subject at undergraduate level, making psychology a subject in faculty of science, introduction of Ph.D programme in psychology.

9. Examples of his innovative ideas include Sand-Motor and Exposure apparatus, Big Muscle Ergo Graph, Group Pass along test, Group Matching test and Dotting test.
10. Bose helped the surgeons by putting the patient in hypnotic trance and mastered the technique of hypnotism and treated mental patients. He made his own investigations into the unconscious regions of the mind.[2,3]

Indian Psychoanalytical Society started by Girindrasekhar Bose has head office in Kolkata and has Mumbai and Delhi chapter too. The society has two wings- Indian Psychoanalytical Society and Indian Psychoanalytical Institute. The Indian Psychoanalytical Institute offers training in Psychoanalysis and it has an elected board, president and secretary .Indian Psychoanalytical Society is run by a council, which has a president, secretary, assistant secretary, with 32 members, 40 candidates whose training is in progress every year.

Board looks after training procedure, from selection of candidates to final evaluation, also offers one year counseling course.

Society runs a psychiatric clinic, offering services to poorer section of society for a nominal charge. It also organizes memorial lectures, conferences and seminars periodically.

Society is also offering 6 months certificate course on basic theory of Psychoanalysis along with WB state University. Society runs a library (has 2500 books), has a Journal called Samiksha released thrice in a year.[4]

Publications

Bose's 'New Theory of Mental Life' emphasized on theoretical ego. He proposed that many theoretical problems can be solved with his theory of opposite wishes and theoretical ego.

He published numerous articles in Samiksha (an international journal of psychoanalysis-1947) for example 'Ambivalence'-which foregrounds the importance of ambivalence in human psychic constitution.

'The Nature of the wish' (1951) in Samiksha demonstrates the importance of 'see saw' of the 'double wish'

In 1952, three articles were published in Samiksha 'Analysis of Wish', Pleasure in Wish' and 'Sex and Anxiety'

In 1966, 'The Yoga Sutras' was published by 'The Indian Psychoanalytical Society'

In 1986, Bose's Bengali book on dreams 'Svapna' was published by the Bangyia Sahitya Parishad.[3]

In general psychology, he made a number of original contributions, his article on 'Illusion' was elaborately discussed by Spearman in his famous book Psychology down the ages.

He studied ancient Sanskrit texts, philosophical, mythological, historical literatures with the help of pundits. This resulted in his publication of 'Purana Prabesh Patanjali Yoga sutra, Bhagawat Gita.

He also took interest in juvenile literature, in this respect his book Lalkalo (Red and Black) will always occupy a distinctive position.[5]

Awards and Honours

Bose was President of Psychology section of Indian Science Congress (1933, 1938). He was member of Psychoanalytical society (President, 1922) and was the founder of Indian Psychoanalytical Society.[5]

Conclusion

He was not just a doctor, was a humanitarian, devoted teacher, efficient editor, good administrator. He had deep profound knowledge of Indian Philosophy, applied this knowledge for interpretation of psychoanalysis. He was a good magician, used to entertain children with his magic shows. He also used his skill in magic to develop rapport with rural patients who were scared of coming to a psychiatrist for treatment. He used to run a free outdoor chamber in his home to treat psychiatric patients.

A multitalented Psychiatrist, Psychoanalyst, founder of Psychoanalytical society of India is definitely huge inspiration and role model to all psychiatrists of India.

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Nil.

Conflict of Interest

Nil.

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Manuscript Submission

Publication Ethics

Decisions

The editor of the Telangana Journal of Psychiatry is responsible for deciding which of the submitted manuscripts need to be published. The editor may be guided by the journal policy, editorial board, and the reviewers. He needs to be aware of issues like libel, copyright infringement and plagiarism.

Freedom from bias

An editor should evaluate manuscript s for their intellectual content without any sort of possible or potential bias.

Confidentiality

The editor should not disclose any information about a submitted manuscript to anyone other than the corresponding author, reviewers, editorial board members, and the publisher. No one involved in publication process should use material submitted in author's unpublished manuscript without the express written consent of the author.

Conflict of interest and disclosure (financial or otherwise)

Definition: 'COI exists when there is a divergence between an individual's private interests (competing interests) and his or her responsibilities to scientific and publishing activities such that a reasonable observer might wonder if the individual's behaviour or judgment was motivated by considerations of his or her competing interests (WAME).' An author (or his institution or employer) may have financial or personal relationships that could bias the manuscript. It is better to disclose completely, and contact the editor if there are some doubts. The disclosures should be made in the 'covering letter, author declaration form' and the same is published at the end of the manuscript. If there is no conflict of interest, the same should be declared; a statement 'conflict of interest: Nil declared' will be published in the manuscript. In case of non-disclosure, there may be delay in evaluation and review of the manuscript.

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What needs to be declared? With reference to the submitted manuscript, i) financial ties: fees, patents, stocks, gifts, or services, etc, ii) academic commitments, including educational grants, funding, iii) political or religious beliefs, pertinent to the manuscript in question, iv) institutional affiliations and employment, v) others: consultancies; honoraria; speakers bureau; stock ownership or options; expert testimony; royalties; donation of medical equipment The COI policy is applicable to all manuscript submissions, including editorials, commentaries, letters to the editor, etc.

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The Telangana Journal of Psychiatry operates a strictly anonymous inter-institutional external double-blind peer review process This is one of the first anonymous, double-blind, peer reviewed, open access journals from India, i.e. the authors and the reviewers are not aware of each other's identity.

The manuscript submission and editorial review process includes the following steps:

1. An author submits a manuscript to the editor by email.
2. The editor does an initial review of the manuscript. He makes an initial decision based on manuscript quality and editorial priorities. All articles which do not meet the journal standards are sent back to the author for revision/rejection.
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The requirements stated below are in accordance with the International Committee of Medical Journal Editors, of which The Telangana Journal of Psychiatry is a member. See "Uniform Requirements for Manuscripts Submitted to Biomedical Journals" at icmje.org.

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The manuscripts will be reviewed for possible publication with the understanding that they are being submitted to one journal at a time and have not been published, simultaneously submitted, or already accepted for publication elsewhere. The Editor reviews all submitted manuscript s initially. Manuscript s with insufficient originality, serious scientific flaws, or absence of importance of message is rejected. The journal will not return the unaccepted manuscripts. Other manuscripts are sent for anonymous and double-blind peer review, i.e. these will be sent to reviewers without revealing the identity of the authors. Also the authors are not aware of the reviewers. Within a specified period, the authors will be informed about the reviewers' comments and acceptance/rejection of manuscript. Articles accepted would be copy edited for grammar, punctuation, print style, and format.

Types of manuscripts

Editorials, Guest editorials, View points: The author should have adequate experience in the field of mental health. Scholarly reviews of topics within the scope of the journal are considered. The authors should give expert opinions from their personal experience.

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Abstract page (page 2)

This page should carry the full title of the manuscript and an abstract. For original articles the abstract should be structured and constructed under the following headings: context / background (the rationale for the study), aims, methods (how the study was done), results (the main findings), and conclusions.

Below the abstract, provide 3 to 6 key words.

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The text of original articles should be divided into sections with the headings: introduction (with aims and objectives), methods, results, discussion, and conclusion.

Sometimes, the results and discussion can be combined under the same heading.

Ethics: No study should be conducted without taking written informed consent from subjects. In the case of minors, assent should be taken from the subjects, and written informed consent should be obtained from the legal guardian. The same should be documented in the 'methods' section. Also, a statement 'appropriate ethical approval procedures were followed in consenting the subjects and also in conducting the research' must be incorporated. Authors must ensure that patient confidentiality is no way breached. Do not use real names, or disclose information that might identify a particular person. Special care should be taken when using illustrative material. If any ethics committee approval is taken, the same should be mentioned here.

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Number pages consecutively, beginning with the title page, in the upper right hand corner.

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at birth: ten year data from a tertiary care centre in a developing country. Indian J Ophthalmic 2007; 55: 331-6.
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Journal articles on the Internet: Abood S. Quality improvement initiative in nursing homes: the ANA acts in an advisory role. Am J Nurs [Internet].2002 Jun (cited 2002 Aug 12); 102(6): (about 3 p.). Available from: http://www.nursingworld.org/AJN/2002/June/Wawatch.htm
Homepage on the Internet: Cancer-Pain.org New York: Association of Cancer Online Resources, Inc: c200-01(updated 2002 May 16: cited 2002 Jul 9). Available from http://www.cancer-pain.org/.
Part of a homepage/web site: American Medical Association (homepage on the Internet). Chicago: The Association: c1995-2002(update 2001 Aug 23: cited 2002 Aug 12). AMA Office of Group Practice Liaison9about 2 screens).Available from: http://www.ama-assn.org/ama/pub/category/1736.html
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Guest Editorials	300	5000	50	10	5
View point	300	5000	50	10	5
Review article	300	5000	50	10	5
Original article	300	5000	25	10	5
Case report	200	2500	20	5	3
The stalwarts	100	2000	15	3	2
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