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Editorial

Emergence of Distinct Psychological Services as a Priority, During PANDEMIC

Tej Bahadur Singh

New year 2022 began with a happy note of some relief from the disastrous phase of Covid 19, with an apprehension of 'Third Wave '. However, advisory issued from time to time by the state and rapid progress in vaccination has eased the situation. But spread of Covid 19 in different forms or its variants are being reported from different parts of the country.

Thus, by this time after two episodes of Covid 19 in the last two years (2020 & 2021), there was a realization of this fact strongly that along with all medical treatment & pharmacotherapy, supportive therapies and services are utmost needed to meet out the health care needs and wellbeing of both victims as well as caregivers. A national network of helplines, webinars for generation of awareness, prevention and as a supportive measure to caregivers. Looking at the overall scenario in adversities and tragic consequences of PANDEMIC; service delivery by Health Care Professionals was highly appreciated and supported by staff, administration and Police personnel.

Another significant aspect of care during PANDEMIC was health care of children & managing their schooling. Children and Adolescents got a substitute for schooling through virtual classes; but they were deprived of enjoying social interaction and company of their peer group, resulting in mental health problems; internet addiction, behavioural problems, aggression and marked increase in anxiety and depression among them.

Two episodes of Covid 19 in the year 2020 & 2021 brought Psychology & services of the Psychologists as professionals, distinctly; on the forefront along with other healthcare professionals with a rapidly growing realization in the community and by the state. There was a need for something more than medicine, intravenous drips and ventilators as reported by recovering victims in terms of empathic understanding, psychosocial support or even talks on positive spiritual thoughts and religious prayers.

This has led to the constitution of The National Commission for Allied and Healthcare Professions Act, 2021 under an act passed by Parliament of the Indian Government, as a regulatory body of allied health care professionals to monitor their training (for manpower development), service delivery (practice) and accreditation (registration as professional practitioner).

This bill under the heading of professionals under 'Behavioural Health Sciences' identifies Psychologists under different categories and listed them as follows:

- Psychologist,
- Behaviour Analyst,
- Integrated Health counselors &
- Mental Health support workers,

as allied health professionals. It is difficult to say how much prethinking has gone into identifying Psychologists under the four categories, as the bill came as demand for an emergency situation of spread of Covid 19. The Psychologists categorized under all 4 categories thoroughly need to be defined in terms of roles & duties, in different work settings of service delivery, developing training courses and training centers, development of courses, diploma/degrees to be awarded and their registration for service delivery or practice. As there is always a chance of overlap between these new and already existing training courses running at different centers for other categories of Psychologists and Counselors.

Registration of Psychologists as health care professionals commenced by inviting applications for registration from experienced professionals of the country to register with this new council. Only time will tell the overall implication and success of formalization of quality service delivery of these professionals through accreditation and control with specified regulation and guidelines by this newly constituted council.

Another significant development during this period was the declaration and launching of 'MANODARPAN' 2021 (NCERT, 2021) with sufficient funding by the Government of India through the Ministry of Education. Manodarpan is in action through NCERT & UGC by extending desired support to ensure the wellbeing of the students. Early identification and early intervention is the core of Manodarpan. UGC Came out with guidelines for the universities to set up a ' Well Being Cell ' to cater to the mental health needs of students.

Prior to the Pandemic nearly a decade back (Govt. of India: MOE,2012; erstwhile MHRD) constituted a taskforce to study the increasing number of suicides among students of IITs, NITs, IITs & Other Central Government funded Technical Institutions; with a focus on occurrences o increasing rate of suicide in centrally funded technical institutions. Task Force stressed catering to the Psychological Needs of students and recommended each institute should set up a Counseling/wellbeing service center to ensure a mechanism to handle suicidal behaviour and crisis management. Under provision of financial support, a sum of Rupees sixty-five lakhs was allocated to each institution to set up the service.

Thus, in the 75th year of independence known as AMRIT MAHOTSAWA of Azadi of the nation 3 Ministries of Government of India i.e., Min. of Education, Min. Health & Family Welfare & Min. of Social Justice & Empowerment. MOSJE has become so generous to the extent that through the Rehabilitation Council of India this ministry is granting recognition to new training institutions/ departments to train Clinical Psychologists like free Ration Cards. National Institutes dealing with specific categories of Divyangjan as

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per their mandate have also been identified by RCI; as well, equipped with infrastructure and manpower to train Clinical Psychologists successfully & effectively.

One National Institute located at Dehradun had been entrusted with the responsibility to conduct training of Clinical Psychologists recently (2022). This institute denied the request of a Clinical Psychologist already working there; designation of Lecturer in Clinical Psychology (in the mid-1980s), when at another NIs Clinical Psychologists with same pay grade, role and responsibilities were enjoying the status of Lecturer in Clinical Psychology. Now the same institute has been authorized as a training center for Clinical Psychologists irrespective of the concern that Clinical is compulsorily linked to patient care whereas clients in need of Special Education and Rehabilitation Services are not necessarily patients.

Further, RCI is not serious in defining categorically roles and responsibilities of two different groups of professionals i.e., Clinical Psychologists and Rehabilitation Psychologists. As they are being used as substitutes of each other in filling up faculty and non-faculty posts.

Such trend is likely to be damaging and the same will retard the progress and professional growth of the discipline of Clinical Psychology. Which was launched as training for mental health professionals during the late 1960s in the country. At present recognition to run training centers for Clinical Psychologists are issued to private institutes and NGOs by RCI like free passes of a fashion show.

The only concern and apprehension being expressed is that RCI has turned out or likely to turn out very soon a replica of MCI, full of rampant corruption as training of Clinical Psychologists is most lucrative in terms of revenue generation among all the groups of Psychologists defined by MOHFW, MOE & MOSJE. Thus, compelling State to convert RCI into 'National Rehabilitation Commission'.

This is high time to review all emerging groups of Psychologists by the state in the year of AMRIT MAHOTSAW and precisely define their role and responsibilities as per their specific service areas for wider coverage and pervasive nationwide implementation.

Regarding the issues addressed and topics covered in this issue of IJCP, we noted that even after publishing a special issue (IJCP, Dec.2021) on COVID 19, we are still receiving manuscripts covering various aspects of COVID 19. Pandemic, causing psychological distress affecting positive mental health is presented lucidly in the Indian context during the second wave of Pandemic. Another large survey-based article portrayed the Post traumatic effect of Pandemic on the general population. Social Phobia linked to internet addiction during the outbreak of Covid 19 among college students noted strong relationship between Social Phobia and internet addiction during Pandemic.

Two scale development reports are interesting being extensive procedural description i.e. 'Positive and negative affect schedule' and 'Geriatric clinical depression rating scale'. Studying pathways to Suicide is the recent approach to explore Suicide. An original research study on Pathways of Suicide among adults has been explored thoroughly and discussed in terms of role of facets of emotional dysregulation and resilience.

An intervention-based study on Breast Cancer patients applying Mindfulness based Reduction Therapy in managing their Body Change Stress & Mood States. These findings add to the existing therapeutic efforts for this group in the Indian context. A preliminary investigation reported the feasibility & effectiveness of Rumination Focused Cognitive Behaviour Therapy and noted the same to be effective in managing Depression and Anxiety Disorder.

Arsenic induced Cancer is a priority area of research in the Indian context. Study reported in this issue demonstrated underlying anxiety and depression among the Arsenic affected population.

Cyber Psychology is now a well-known and established branch of Psychology. Studies based on Internet Addiction described prevalence of Internet Addiction Disorder. Another study on the same population noted the extent of stress, anxiety and depression of this group.

A study on borderline personality disorder observed that extending social support to this population is likely to enhance their wellbeing. A report on self-esteem of Children of Alcoholics is important from the viewpoint of rehabilitation and care of the families of Alcoholics.

A review of Applied Behaviour Analysis with implications makes a useful and interesting reading for the readers. Another review on Positive Psychology intervention looked at application and how to integrate ancient Indian Thinking to make these interventions more feasible for the Indian context.

The Book Review published in this issue is important from the developmental perspective of Children in India. Author a very senior clinician specialized in Child and Adolescent Mental Health has addressed the issue of Digital Demon, cautioning parents to be aware of this Digital Demon.

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Original Research Article

Effectiveness of Mindfulness-Based Stress Reduction (MBSR) on Body Change Stress and Mood States of Patients Suffering from Breast Cancer

Tilottama Mukherjee[1*] and Phooljani Ghosh[2]

ABSTRACT

The emotional trauma and the adverse side effects of breast cancer treatment triggers a wide range of negative physical and psychological conditions such as pain, fatigue, nausea, decreased sleep, stress, hopelessness, anxiety, depression, and the like. The psychosocial assistance provided by Mindfulness-Based Stress Reduction (MBSR) as a complementary medicine programme has its roots in Buddhist Spiritual beliefs. It works with the unity of mind and body as a whole.

Method: The present work attempted to investigate the efficacy of MBSR training on body change stress and mood states of post-operative breast cancer patients. For the present study, a 6-week MBSR training programme was used, with a weekly session of 45-minute duration. It was a control group pre-post design. The purposive sampling method was used for composing the sample. The sample consisted of an experimental and a control group, where only the experimental group received the MBSR training. The size of both groups was equal (N= 30 each). The Breast Impact of Treatment Scale and Profile of Mood States was used to measure the pre-intervention and post-intervention scores.

Results: The findings of statistical treatment show that MBSR training had a significant positive effect on the participating patients. The pre-test and post-test means did not vary significantly for the control group.

Conclusion: MBSR training, as a structured and alternative form of psychosocial medicine, proved to be significantly effective in reducing the body change stress of breast cancer patients and improving their mood states.

Keywords: *Cancer, Breast Cancer, Body Image, Mood States, Mindfulness, MBSR*

INTRODUCTION

As per the National Cancer Registry Programme Report 2020 released by The Indian Council of Medical Research (ICMR), breast cancers contribute 14.8% of the total cancer burden, nearly two lakhs of cases in India (ICMR, 2020). Patients with cancer also undergo significant physical and psychological turmoil caused by the treatment procedures' distressing and painful symptoms and the bitter side effects (Iverson, 1993). One very prominent source of stress for breast cancer survivors is the distortion of breasts. Most of the patients, after surgery, are left with single breasts or no breasts at all, which gives a strong sense of disfigurement resulting in body change stress. Body change stress refers to subjective psychological stress that accompanies women's negative and distressing feelings and emotions, thoughts, and behaviours resultant from breast cancer and breast surgeries (Frierson, Thiel, & Andersen, 2006). It manifests itself in trauma-like symptoms, such as:

- Re-experiencing (feeling sad during the reminder of the change in body)
- Avoiding (attempts to limit their physical exposure to the self or others)
- Numbing (loss of interest in activities where the body plays an important role)
- Arousal symptoms (anger and irritability)

Thus, chemotherapy and reconstruction surgeries for breast cancer exacerbate body image issues in patients, which contributes to their poor psychological health (Phoosuwan & Lundberg, 2021).

Mindfulness-Based Stress Reduction (MBSR) has been developed by Jon Kabat-Zinn in 1979. It employs meditation practice and yoga exercises, generally through an 8-week program with weekly sessions of 2.5 hours (Kabat-Zinn, Massion, Kristeller, et al., 1992). It is a promising alternative medicinal technique to reduce stress, including body change stress. In the last few years, growing interest can be seen in applying this therapeutic technique in breast cancer, as it reduces stress and helps one cope with the disease processes. Research in this area is still not sufficient. However, a review study reported that in recent years, MBSR has developed immense potential both as an area of research and intervention programme for breast cancer patients, where mindfulness-based meditation has improved the quality of sleep in such survivors (Ghosh & Mukherjee, 2013), and also significantly improved the body image, besides improving the global and specific quality of life (Rahmani & Taleprasad, 2015).

Breast cancer always comes with the possibility of disfiguring surgery that challenges a woman's feminity. As a result, a marked deterioration in various psychological aspects of breast cancer patients is seen, eventually lowering their holistic quality of life. Body image is often thought to be related to physical appearance only. However, it is also associated with self-worth, self-concept, integrity,

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and wholeness. So, addressing the concern related to body image and body change stress is essential to improving women's quality of life with breast cancer.

The mood is the prevailing psychological state that colours a person's every walk of life. The emotional impact of cancer diagnosis and the prolonged treatment protocol is almost unbearable. Fear, anger, anxiety, hopelessness, and sadness become a patient's everyday companion. A study reported that higher levels of mindfulness were associated with lower symptom levels of pain severity, fatigue, anxiety, depression, and sleep disturbance in metastatic breast cancer patients (Zimmaro, Carson, Olsen, et al., 2020).

Emotionality and mood states are critical predictors of quality of life and the survival of breast cancer patients.

While concluding the possible efficacy of mindfulness-based supportive therapy in improving the patient's psychological status and cancer experience, this study further noted the need for more studies on MBSR in the breast cancer population.

MATERIALS AND METHODS

Participants

The present research was conducted based on a pre-post design. The sample had been classified into two groups – one group had been subjected to mindfulness training, and the other group received no such training. The sample for the present study was based on the following inclusion criteria: (1) women in the age range of 40 to 55 years; (2) married; (3) from urban and semi-urban areas in Kolkata, India; (4) had been diagnosed with breast cancer within the past 2 to 6 years; (5) had undergone mastectomy. For this study, the purposive sampling technique was used. The sample consisted of the experimental group (that received mindfulness training), and the control group (that did not receive mindfulness training). The number of subjects was 30 for each group. The experimental and the control groups were pre-matched on demographic variables.

Following the research design, measures were obtained for the Experimental group in both pre-and post-conditions, before receiving the mindfulness training and after receiving the six weeks of training on mindfulness. However, the subjects belonging to the Control group did not receive any such training, though two measures were taken, one initial measure and the other after six weeks.

Measures

The present study collected pre-and post-measures by administering the following questionnaires.

Demographic information

An information schedule was developed to collect information about the general demographic characteristics of the subject relevant for the study (such as name, address, age, educational qualification, marital status, duration of illness, and treatment history).

Body Image

The Breast Impact of Treatment Scale (BITS) was developed by Frierson et al. (2006), and designed to measure the body's change stress. The BITS is a unidimensional scale consisting of 13 items and uses a 4-point rating scale: 0 = not at all, 1 = rarely, 3 = sometimes, and 5 = often. The raw scores of 13 items are summed to obtain a total score ranging from 0 to 65, where higher scores indicate greater body change stress.

Mood states

The Profile of Mood States (POMS) was developed by McNair et al. (1971). This 65-item scale is self-administering in nature. It measures Mood disturbances in 6 domains – Tension, Depression, Anger, Fatigue, Vigour, and Confusion. It is a 5-point scale, from 0 (not at all) to 4 (extremely). The Total Mood Disturbance can be calculated by adding the raw scores from 5 domains, namely, tension, depression, anger, fatigue, and confusion, and then subtracting the vigour score. It gives a value between (–24 and 177) or (0-200), with lower scores indicating people with more stable mood profiles.

MBSR Training Schedule used in the present study

The MBSR training schedule for the present study is inspired by the original Mindfulness-Based Stress Reduction program (Kabat-Zinn, 1990) and the Mindfulness-Based Cancer Recovery (proposed by Carlson & Speca, 2010). Researchers have used shorter versions regarding the number of sessions and meeting durations. For example, Lengacher, Reich, Postwhite, et al. (2011) used a 6-week version of MBSR on breast cancer patients.

For the present study, a 6-week training program was prepared with weekly sessions of 45 minutes duration. Sometimes, along with breast, lymph nodes from the underarm region are also removed as a precautionary measure. So, it is difficult for post-operative patients to move their hands and shoulder. The session with Hatha Yoga was, thus, excluded from the training prepared, as Hatha Yoga includes stretching all body parts. The session of Silence Retreat was also excluded from the module used, as it was not feasible in the present set-up. The sessions structured for MBSR training in the present study have been tabulated in Table 1.

Procedure

The permission for interviewing the patients and collecting necessary information was obtained from two NGOs in Kolkata, India. Data were collected from two groups of breast cancer patients, viz., the control and experimental groups. The control group did not receive the training, whereas the experimental group received the mindfulness training. The six-week-long intervention was provided to the patients under the experimental group after pre-intervention measures were taken from them. Upon completion of the intervention, a set of post measures were

retaken from them. Pre- and post- measures were also collected from the control group, but they did not go through any intervention. The patients receiving the intervention had to sign a consent form. Rapport was established with the patients, and then the questionnaires were administered. The subjects were told not to skip any question, and they were assured that the information given by them would be treated confidentially.

TABLE 1

Structure of Mindfulness-Based Stress Reduction (MBSR) training

Session number	Session name	Description
1	Orientation	Cancer is a disease, and the psychological turmoil resulting from this disease was discussed in this session. The patients were also informed about the development of mindfulness and its following seven basic attitudinal concepts- Non-judgment; Patience; Beginner's mind; Trust; Non-striving; Acceptance; Letting go.
2	Body Scan	In this session, patients were taught the classical body scan technique, which is a step-by-step relaxation technique, where they learned to re-attach to their body lovingly and gently.
3	Mindful-Breathing	Patients were instructed to pay attention to the rhythm of their breathing. They learned about the Diaphragmatic Breathing and Belly breathing technique.
4	Dealing with Symptoms	The patients learned to deal with hair fall (the most common symptom after chemotherapy) and distorted body image (the most reported area of concern after mastectomy) and were reminded of the attitude of acceptance. They were taught the worth of self, which does not simply rely on exterior looks; instead, the authentic self is a valuable, inseparable part of this universe. Patients learned some mini breathing techniques to deal with sleep disturbances, known as mini practices.
5	Dealing with Negative Emotions	In this session, patients learned to face their negative emotions like-fear, tension, depression, and anxiety. They were taught to call upon their positivity to fight their negative moods.
6	Beyond Cancer	Patients learned how to apply MBSR in their day-to-day life and remain mindful in every walk of life.

Data analysis procedure

Quantitative analysis of the data has been done in two phases:

Phase 1: Descriptive analysis, for which the Mean and Standard Deviation (S.D.) measures were computed.

Phase 2: Inferential analysis, the student's t-test was computed.

Both 'within group' (pre-test and post-test measures of a variable in experimental group and control group, respectively) and 'between group' (pre-test and post-test measure on a particular variable between conditions) t-tests were computed. For interpreting the obtained values of the t-test, the significance level was pre-determined to be taken at 0.05 and 0.01 levels.

RESULTS

As Table 2 shows, for Body Change Stress, the experimental group had a much lower mean score in the post-test condition than in the pre-test condition. The within-group t-value for Body Change Stress was 9.998 which was significant beyond the 0.01 level and for the control group was 0.947 for Body Change Stress, which was not found to be significant at the 0.01 level. On the other hand, for the control group, the mean score in the pre-test condition did not decrease noticeably in the post-test condition.

Table 3 shows that for the experimental group, the within-group t-value for the Total Mood Disturbance was 11.291, which was significant beyond the 0.01 level, and for the control group was 0.259, which was not found to be significant at the 0.05 level. Table 3 also shows the within-group t-values for six mood states under total mood disturbances for both groups. For the experimental group, the within-group t-values were: Tension = 8.961, Depression = 9.511, Anger = 6.374, Vigour = 8.337, Fatigue = 6.297 and Confusion = 7.752, all of which were statistically significant at 0.01 level. However, except for the mood state of vigour in the control group, the within-group t-values for all other mood states were not significant at 0.05 level. The values of control group were: 1.771 for Tension, 0.184 for Depression, 0.510 for Anger, 0.789 for Fatigue, 0.317 for Confusion. The t-value of 2.603 for vigour was significant at 0.05 level.

Table 4 shows the results of the between-group t-test for Body Change Stress and Mood state. There was no significant difference in mean scores in the pre-test condition (t = 1.543). However, the post-test condition (t= 5.764) was significant beyond the 0.01 level for Body change stress. There was a significant difference in the mean score of Mood state in the post-test condition (t=7.115), which was significant at 0.01 level.

TABLE 2: t- values of within-group (Pre-Post) comparisons of Body Change Stress in experimental and control groups

Conditions	Experimental Group		Control Group		t value	
Measures	Pre-Test	Post-Test	Pre-Test	Post-Test	Experimental Group	Control Group
Mean	34.23	23.73	38.30	37.36	9.998**	0.947
S.D.	10.50	8.25	9.90	9.98		

** p<0.01.

TABLE 3: t- values of within-group (Pre-Post) comparisons of Mood States in the experimental and control groups

Mood states	Conditions	Experimental Group		Control Group		t value	
	Measures	Pre-Test	Post-Test	Pre-Test	Post-Test	Experimental Group	Control Group
Tension	Mean	14.40	8.47	17.60	15.33	8.961**	1.771
	S.D.	4.745	3.002	8.244	4.474		
Depression	Mean	18.366	9.90	19.566	19.766	9.511**	0.184
	S.D.	8.409	4.801	9.803	7.815		
Anger	Mean	11	6.733	11.10	11.366	6.374**	0.510
	S.D.	5.413	3.268	5.267	4.923		
Vigour	Mean	7.967	11.267	8.166	6.500	8.337**	2.603*
	S.D.	4.852	4.752	6.607	5.655		
Fatigue	Mean	16.367	13.133	17.233	17.733	6.297**	0.789
	S.D.	4.358	3.159	4.132	3.393		
Confusion	Mean	14.80	11.567	15.733	15.600	7.752**	0.317
	S.D.	2.759	2.473	3.433	3.286		
Total Mood Disturbances	Mean	67	39.133	72.666	73.566	11.291**	0.259
	S.D.	22.376	15.437	28.05	21.549		

* p<0.05, ** p<0.01.

TABLE 4: t-values of between-group (Pre-test and Post-test conditions of both groups) comparisons

Variables	**Conditions**	**t values**
Body Change Stress	Pre-Test	1.543
	Post-Test	5.764**
Mood State (Total Mood Disturbances)	Pre-Test	0.865
	Post-Test	7.115**

** p<0.01.

Table 5 provides the between-group t-values for six different mood states, namely, Tension, Depression, Anger, Vigour, Fatigue, and Confusion. The mean-score comparison for both groups in the pre-test condition showed that the obtained t-values were not statistically significant. In the post-test condition, the between-group t-values for all the six mood states were as follows: Tension = 7.03, Depression = 5.892, Anger = 4.294, Vigour = 3.531, Fatigue = 5.434 and Confusion = 5.371 and all the values were found to be significant at 0.01 level.

TABLE 5:- t-values of between-group (Pre-test and Post-test conditions of both groups) comparisons of Mood States

Mood States	**Conditions**	**t values**
Tension	Pre-Test	1.826
	Post-Test	7.03**
Depression	Pre-Test	0.509
	Post-Test	5.892**
Anger	Pre-Test	0.73
	Post-Test	4.294**
Vigour	Pre-Test	0.134
	Post-Test	3.531**
Fatigue	Pre-Test	0.790
	Post-Test	5.434**
Confusion	Pre-Test	1.161
	Post-Test	5.371**

** p<0.01.

DISCUSSION

The patients who participated in the present study also reported losing one of their breasts as the most disturbing aspect of coping. According to them, losing a breast felt like losing a part of their identity, and undoubtedly a trauma-like experience for most. Every day, their day-to-day activities, like taking a shower or picking up something to wear, or getting ready to go out, reminded them of their loss and that they did look different now. Some patients also reported that their marital life was hampered severely due to a mastectomy. All of these caused their Body Change Stress to increase. This observation can be supported by findings from another study that reported that breast cancer treatment and surgery worsened body image issues in patients and contributed to their worsening mental health indices (Phoosuwan & Lundberg, 2021).

With mastectomy, the patients become more and more distant and alienated from their bodies. They start avoiding their bodies, disown the feelings that come up, and retreat into a shell. These increase body change stress, and consequently, the patients become either shyer or more irritable about it. It was also the primary complaint of subjects participating in the present study.

MBSR is a stress-reduction program that provides training to patients using the attitudinal foundation of mindfulness practices, including nonjudgment, beginner's mind, trust, non-striving, patience, accepting, and letting go (Kabat-Zinn, Lipworth, & Burney, 1985). It promotes experiencing and accepting every moment as it unfolds to one. Many studies have long confirmed the beneficial effects of MBSR in improving one's adjustment to their present state of being. It is also true for cancer patients.

Of the six MBSR sessions offered to patients, one provided a technique called "body scan." The body scan is a structured classical relaxation technique that allows you to establish a close relationship with the body by gradually dealing with each part of the body. The main reason for stress from changes in the body of postoperative breast cancer patients is that women are unable to accept the deformed breast and feel discomfort in the breast. A body scan is an opportunity to re-recognize your body in a very gentle way. It allows her to face problems in a relaxed state. It helps her open up to her body and accepts it with its beauty and its imperfections. While performing a body scan, patients report feeling more relaxed and comfortable by coping with changes in the surgical site and its appearance. Patients learn to release disgusting emotions such as fear and stress associated with the surgical site. It also contains the breast area, which helps to embrace the overall appearance. They have opened their doors to themselves and the world around them, which may have resulted in a significant reduction in stress due to physical changes in patients who underwent MBSR for this study. Once the mind-body connection has been established, they may have been given the wholeness of a non-negative experience. As the patient psychologically reattaches to her body, the distance to her body decreases. Knowing the current state of the body helps them accept it, and the more they accept the changes in their body, the less stressful they are. After practicing body scans, patients report being more patient, relaxed, and content. The majority of patients who participated in this study reported that they felt "important" as if they had rediscovered a long-lost connection with "self."

In the pre-test measurements, both the experimental and control groups were performed similarly on all POMS indexes. However, only the experimental group showed reduced values under post-test conditions, but little or no change was observed in the control group. The t-test within the group showed that there was a significant mean difference between the conditions before and after the intervention in the experimental group, showing a significant effect of MBSR. This result indicates that mindfulness-based stress-reducing training had a significant positive effect on mood, as the score dropped significantly. The results of the t-test between groups further support this result. Since both the groups in pre-test conditions showed similar scores and only the experimental group had received the intervention, the difference between these groups in post-test conditions can safely be attributed to MBSR training.

Further, if we take a closer look at the within-group t-test table, we find that, in the control group, there was a statistically significant difference in mean scores of vigour. Vigour is that factor of POMS for which a more excellent score indicates greater stability. By referring to the mean table, it can be seen that the mean score of vigour in the pre-test condition further decreased in the post-test condition, indicating greater instability. On the other hand, the mean vigour score increased after the intervention in the experimental group, reflecting more stability. This result further supports the need for proper psychological assistance for those who have gone through rigorous procedures in cancer treatment.

Breast cancer patients who have gone through mastectomy face many difficulties to regain their usual level of performance. The pain and uneasiness from surgery, as well as the fear of recurrence, hinder their day-to-day life. Vigour, as a concept, indicates a person's strength and good health, which influences their initiative to work. In other words, it reflects the status of being active. A significant decrease in this factor, as seen in the group that did not receive any intervention in the present study, further emphasizes the influential role MBSR may play in providing psychological assistance to post-operative breast cancer patients. The significant increase in vigour after the experimental group received MBSR proves that this training helps the patients regain their strength to be active in day-to-day life.

A study by Hoffman, Ersser, Hopkinson, et al. (2012) used POMS as a measure of mood in the domains of Total Mood Disturbances, anger, vigour, anxiety, depression, fatigue, and confusion. Statistically significant improvements in outcomes of the experimental group, compared to control group, was found with POMS in all the above domains. Out of six sessions offered to the patients in the present study, one session was dedicated to the method of dealing with unpleasant emotions. As we may call them, negative emotions and moods are pervasive in illness journeys. Not

surprisingly, patients do anything they can to escape such unpleasant feelings.

Through MBSR training, the patients are taught that the best tool to fight negative mood states is to face them, to be aware of their sources instead of running away from them. The patients are taught to greet any negative emotion as it arises and take it as a part of their whole experience instead of just a momentary reflection. The pain arising from the negativity decreases when they can isolate the experience from the feeling tone of a negative mood state. It can benefit from reducing the disturbances arising from negative moods. Patients learn to investigate by way of experiencing these mood states. The true nature, the source or origin, and their contributions to their streams of thought are keys to having a mindful mood experience. Patients are taught to experience the negative mood states as they come and not hold on to them.

One learns the skills of mindfulness by focusing one's attention on one's breath, one's body, the environment, or activities. Being mindful of emotions helps one stand back from the emotion, understand it, and not fear it or struggle against it. It can benefit from reducing the disturbances arising from negative moods. Patients learn to investigate by way of experiencing these mood states. The true nature, the source or origin, and their contributions to their streams of thought are keys to having a mindful mood experience. Patients are taught to experience the negative mood states as they come and not hold on to them. Mindfulness is about having let go. Not clinging to one particular negative aspect of the mood domain helps one overcome it easily. As a result, total mood disturbances decrease. With mindfulness, even the most disturbing sensations, feelings, thoughts, and experiences can be viewed from a broader perspective as passing events in mind rather than as "us" or as being necessarily true (Brantley, 2003). By using the 'cloud' metaphor and combining them with mindful breathing, patients gradually learn to calm down while facing negative mood states like anger, depression, fear, and tension.

Last but not least, patients were reminded of the fundamental attitudinal pillars of mindfulness training. One of those attitudinal pillars is trust, a compelling positive mood state to cope with negativity. The more they call upon their strengths, the more vigorous they become. It is supported by the findings of the present study too. In the experimental group, the score of Vigour increases in the post-test condition (after receiving the MBSR training). An increase in vigour score also decreases the total mood disturbance score. Being vigorous, the patients regain their interest in work, which indirectly improves their Quality of Life. Patients in the present study reported that they could find their inner strength to fight negativity through these sessions.

Thus, in the present study, MBSR proved to be effective in improving the well-being of breast cancer patients, as supported by Modica and Hoenig (2018). Zainal, Booth, & Huppert (2013) found evidence that MBSR in women with breast cancer can enhance mental health by reducing depression and anxiety, thereby reducing Global Mood Disturbance.

CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

Irrespective of the considerable advancement in the medical field, breast cancer is still perceived as a significant threat by most women worldwide. This perception is further responsible for their adjustment to the disease. There was a significant effect of Mindfulness-Based Stress Reduction on Body Change Stress and Mood States of post-operative breast cancer patients in the present study.

However, in the present work, the data was collected from two NGOs, where the patients would be available only for a brief period. So, the Mindfulness-Based Training Programme was conducted with many difficulties. It was apprehended that if the researcher had asked the patients to come for the follow-up sessions after a gap of two-three months, most of them would not turn up. Despite the limited scope, the principal investigator informally ensured that even after sessions were complete, at any point in time, if any patient felt any psychological distress, the researcher would address those issues promptly and adequately, either telephonically or through other means of communication. An additional limitation of the present study was that only patients with mastectomy were included. A better comparison for Body Change Stress would have been possible if patients with Lumpectomy were also included.

Conflicts of Interest: The authors declare no conflict of interest.

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Original Research Article

Pandemic, Psychological Distress and Positive Mental Health – Indian Scenario during the Second Wave of the Pandemic

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ABSTRACT

Aims/Objectives: Positive psychological perspectives focus on personal qualities and life choices that promotes a healthy and meaningful life. The purpose of the present study was to explore the interaction between psychological distress and positive psychological perspectives during the second wave of the pandemic in India and to identify the predictors of psychological distress.

Methods: The sample consisted of 106 adult individuals residing in India. The participants filled out the questionnaires mailed to them during the months of June and July, 2021.

Results: The results of current survey indicated that there were significant differences in resilience score, hope total score, presence of meaning score and search for meaning score among individuals with various levels of psychological distress experienced during the second wave of the pandemic. Findings also indicated that resilience, age, current mental illness and gender are the predictors of psychological distress in the participants.

Keywords: *COVID-19 pandemic, positive psychology, resilience, hope, meaning in life*

INTRODUCTION

The World Health Organisation's Director-General on 11th March, 2020, had pointed out that 'Pandemic is not a word to use lightly or carelessly' (WHO, 2020). The impact of any pandemic is huge and devastating and the coronavirus disease 2019 (COVID-19) caused by the severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) is not an exception to this. The first outbreak of this deadly virus occurred in Wuhan city of China (Zhou, et al., 2020) following which, it caused unprecedented impact on all lives across the globe. Heterogeneous measures were adopted by various countries worldwide to combat with this adversity; however, majority of the countries have witnessed at least two waves of COVID-19 and its enervating repercussions. India being no exception, experienced a ghastly second wave that created more havoc than the first wave (Kumar, 2021). During the third week of April, 2021, India saw a massive surge of cases with daily number of cases crossing the 2 lakh mark (Lancet, 2021) and mainly the younger population were exponentially affected by the devastating strains of the virus during this second wave (Jain, et al., 2021). Though restrictions imposed by the Government of India curbed the spread, helped to manage the situation to some extent and benefitted the country to prepare for the worst situation during the first wave. However still, the second wave of the pandemic affected the Indian population at an alarming rate with rapid spread of virus, exhaustion of resources and collapsing of public health care system. A global public health emergency of such a scale with multifaceted severe consequences will surely induce anxiety and distress as normal responses. Some may be more equipped than others to successfully deal with stress and adapt easily to new circumstances, making the impact of the pandemic highly heterogeneous. Studies focussing on prevalence and severity of psychological distress revealed increased prevalence of depression and anxiety in both patients who experienced COVID-19 infection and the general public (Qiu, et al., 2020; Zhang, et al., 2020). The continuity of this stressful situation for a prolonged period is further depleting us from our psychological resources and overwhelming us with a pervasive uncertainty. The long term effects of this pandemic is still unclear to us, however the creation of distress among people beyond geographical locations, cultural and social systems is quite evident through its manifestations. (Wang, et al., 2020a, 2020b). The danger imposed by disastrous events such as the current pandemic, has been positively correlated with distress symptoms and negatively correlated with individual resilience (Braun-Lewensohn & Al-Sayed, 2018; Eshel & Kimhi, 2016). American Psychological Association defines resilience as a process of bouncing back from difficult experiences and adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress (Newman, 2002). The significance of the concept of resilience is derived from its direct link to the ability to effectively respond to unexpected occurrences (Turenne, et al., 2019). Studies portray that one of the foremost negative predictor of COVID-19 anxiety is individual resilience (Kimhi, et al., 2020). In United States national surveys, while assessing psychological resilience during the COVID-19 in the general adult population, lower scores on resilience were associated with worse mental health outcomes, including more severe depression and anxiety. Lower resilience was also associated with greater worry about the effects of COVID-19 (Killgore, et al., 2020, C. H. Liu, et al., 2020). For effective coping with unprecedented adversities in life hope may act as a potential resiliency factor having the capacity to reduce emotional problems like anxiety and depression. (Braun-Lewensohn, et al., 2021). It can aid one in examining the sources of personal strength related to the future (Sharabi, et al., 2012). According to Snyder (2002) hope helps an individual realise the divergent ways to achieve desirable goals and is

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moulded by individual's views about the situation. Researchers opined that hope involves emotional elements of expectation, along with cognitive and deductive thinking to pursue innovative ideas and solutions (Lazarus, 1991; Snyder, 1994). A study conducted during the second wave of the pandemic in Israel reveals that the lowest levels of interpersonal hope is associated with highest levels of emotional distress (Braun-Lewensohn, et al., 2021). Resilience in the face of distress is fostered when we are able to make meaning out of the crisis and challenges, able to regain a positive hopeful outlook, to rise above hardships and experience a transformation and a sense of purpose (Walsh, 2020). Analysing various approaches to meaning in life Steger (2009) defines meaning in life as "*the extent to which people comprehend, make sense of, or see significance in their lives, accompanied by the degree to which they perceive themselves to have purpose, mission, or overarching aim in life"* (p. 682). There is a dearth of studies conducted during the pandemic that have explored how resilience, hope and meaning in life interact with psychological distress. Also exploring the positive psychology perspectives of resilience, hope and meaning in life may bring light to the importance of fostering and strengthening them in the face of the current adversity. It is known fact that a deleterious situation as the current pandemic may drain us of our coping resources and resilience potential as a normal consequence and hence replenishing, vitalising and nourishing it is the call of the hour. The present study attempts to explore these positive psychological perspectives (resilience, hope and meaning in life) with respect to various levels of psychological distress during this second wave of the pandemic in India.

METHODS

Objectives: To explore the association of positive psychological perspectives (resilience, hope and meaning in life) with the experience of various levels of psychological distress during this second wave of the pandemic in India. To identify the predictors of psychological distress during the second wave of the pandemic.

Participants: Indian adult citizens were invited to complete the survey over a time period of 2 months (June and July, 2021) during the second wave of the COVID-19 pandemic in India. A total of 106 participants took part in the survey.

Measures

Semi-structured socio-demographic and clinical datasheet: The clinical and socio-demographic datasheet was used to collect the background information about the participant such as age, gender, educational qualification, occupation, residence, family type, whether infected in the first wave or second wave, whether any close family member or friend affected in the first wave or second wave, whether there was any incidence of death amongst family members or friends, presence of any significant past physical illness/mental illness, presence of any significant current physical illness/mental illness and whether the participant is a health care professional.

Kessler Psychological Distress Scale (Kessler, et al., 2002): It is a 10-item questionnaire designed to yield a global measure of distress based on questions dealing with anxiety and depressive symptoms that a person has experienced in the most recent 4 week period. Scores range from 10 to 50 where, score under 20 are likely to be well, score between 20-24 are likely to have a mild mental disorder, score between 25-29 are likely to have moderate mental disorder and lastly score 30 and over are likely to have a severe mental disorder. The maximum score is therefore 50, indicating severe distress, and the minimum score is 10, indicating no distress (Andrews & Slade, 2001).

Brief Resilience Scale (Smith, et al., 2008): This is a 6-item self-report scale with a 5-point response scale in which a higher score indicates a higher degree of resilience. The total score ranges from 6-30.

Adult Hope Scale (Snyder, et al., 1991): A 12-item scale which measures a respondent's level of hope. The scale is divided into two subscales – Agency and Pathways. It has 12 items and each item is answered using an 8-point Likert-type scale. The scores may possibly range from 8 to 32.

Meaning In Life Questionnaire (Steger, et al., 2006): It is a 10-item questionnaire intended to measure two dimensions of meaning in life. They are - Presence of Meaning and Search for Meaning. Respondents answer each item on a 7-point Likert-type scale.

Procedure

During the second wave of the pandemic in India, in the months of June and July 2021, any adult individual were approached through online platform to participate in the current study. Information regarding the current research and its implication were explained. On showing interest and giving consent to participate in the study, the clinical and socio-demographic data sheet, Kessler Psychological Distress Scale (Kessler, et. al. 2002), Brief Resilience Scale (Smith, et. al. 2008), Adult Hope Scale (Snyder, et al. 1991) and Meaning In Life Questionnaire (Steger, et.al. 2006), typed out in google forms were circulated through social media. The respondents were also informed that their participation was voluntary and anonymous and that they were free to withdraw their participation for any reason at any time during the procedure. Maintenance of confidentiality of information was assured. The response to every question were made mandatory for the respondents to proceed further. The data collected were subjected to statistical analysis using SPSS-16 (Levesque, 2007). MANOVA was computed to understand whether the positive psychological perspectives (resilience, hope and meaning in life) differed with the various levels of psychological distress. Simple linear regression was computed to find out the various predictors of psychological distress and stepwise linear regression model to find the strongest predictor during the second wave of the pandemic in India.

RESULTS

The survey consisted of 106 participants with 46 individuals functioning well, 14 belonging to mild category, 13 belonging to moderate category and 33 belonging to severe category of psychological distress in the course of the second wave of the pandemic in India. Univariate analysis

(ANNOVA and independent sample t test) indicate significant difference in psychological distress with respect to the clinical and socio-demographic variables of age (p = 0.002), gender (p = 0.001), past mental illness (p = 0.01) and current mental illness (0.001). It was also found that of the four age group (18-25, 26-35, 36-45, 46-60) highest level of psychological distress was found in the youngest age group of 18-25 (mean = 25.85, S.D. = 8.94) and lowest level of psychological distress was found in the oldest age group of 46-60 (mean = 18.50, S.D. = 8.45). Psychological distress in females (mean = 25.48, S.D. = 9.57) were greater than psychological distress in males (mean = 18.97, S.D. = 8.18). Again psychological distress was found to be higher in individuals with past mental illness (mean = 28.68, S.D. = 10.70) than individuals who did not have any past mental illness (mean = 22.37, S.D. = 9.12). Similarly individuals having current mental illness had greater psychological distress (mean = 30.65, S.D. = 10.29) than individuals not having any current mental illness (mean = 22.22, S.D. = 8.98).

Table 1: Regression Model Summary with Predictors: Age, Gender, Past Mental Illness and Current Mental Illness

R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig
.511	.261	.232	8.43	8.92	<.001**

*p < 0.05, **p < 0.01

Thus the clinical and socio-demographic of variable age, gender, past mental illness and current mental illness were included in the regression model. Simple linear regression analysis revealed presence of significant predictors of psychological distress **(Table 1)** which are - age (t = - 2.72, p = 0.008), gender (t = 3.28, p = 0.001) and current mental illness (t = - 2.73, p = 0.007).

Table 2: Positive psychology variables with respect to levels of psychological distress (MANOVA)

Effect		Value	F	Sig.
Psychological Distress	Wilks' Lambda	.625	4.24	<.001*

*p < 0.05, **p < 0.01

Before computing MANOVA, Levene's test of equality of variance was computed and it revealed that the results were not significant for most of the study variables. Further, Box's test of equality of covariance was also not significant suggesting that the assumption of homogeneity of covariance was met (p = 0.242). **Table 2** shows that the positive psychology variables varied significantly with respect to four levels of psychological distress score (well, mild, moderate & severe) considering Wilks' Lambda test statistics of MANOVA. **Table 3** shows that the means scores of resilience, hope total score, presence of meaning decrease with the increase in severity of psychological distress and mean scores of search for meaning increase with the increase in severity of psychological distress, only for moderate level of psychological distress hope total score, presence of meaning and search for meaning was found to decrease than individuals with no psychological distress. It further shows that post-hoc analysis through ANNOVA indicates significant difference in all the four positive psychology variables – resilience, hope total score, presence of meaning and search for meaning with respect to four levels of psychological distress.

Table 3: Mean and standard deviation and post-hoc ANOVA of positive psychology variables with respect to levels of psychological distress

	Psychological Distress								F	Sig.
	Well		Mild		Moderate		Severe			
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.		
Resilience Score	3.71	.71	3.21	.42	3.09	.74	2.84	.639	11.53	<.001**
Hope Total Score	53.43	7.61	47.71	6.56	49.77	6.53	42.85	10.05	10.74	<.001**
Presence of meaning	27.39	5.48	24.93	7.10	25.69	5.23	22.2	7.01	4.47	.005*
Search for meaning	22.24	7.89	25.8	7.12	22.15	5.55	26.79	5.36	3.51	.018*

*p < 0.05, **p < 0.01

Table 4: Regression Model Summary with Predictors: Resilience Score, Hope Total Score, Agency, Pathway, Search for Meaning and Presence of Meaning

R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
.626[a]	.392	.355	7.72	10.63	<.001*

*p < 0.05, **p < 0.01

Table 5: Stepwise regression analysis with predictors - Resilience Score, Age, Current Mental Illness and Gender

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.543[a]	.295	.288	8.11	43.47	<.001*
2	.586[b]	.343	.331	7.87	26.94	<.001*
3	.608[c]	.370	.351	7.74	19.96	<.001*
4	.632[d]	.400	.376	7.60	16.80	<.001*

*p < 0.05, **p < 0.01

a. Predictors: Resilience Score

b. Predictors: Resilience Score, Age

c. Predictors: Resilience Score, Age, Current Mental Illness

d. Predictors: Resilience Score, Age, Current Mental Illness, Gende

Further simple linear regression analysis with predictors - resilience score, hope total score, agency subscale score, pathway subscale score, presence of meaning score and search for meaning score and psychological distress as the criterion revealed, presence of only one significant predictor of psychological distress **(Table 4)** which is resilience (t = - 3.15, p = 0.002). Stepwise regression model indicated resilience as the strongest predictor of psychological distress followed by age, current mental illness and gender during this second wave of the pandemic in India **(Table 5)**.

DISCUSSION

The current survey revealed that among the clinical and socio-demographic variables, psychological distress of the participants varied with respect to age, gender, past mental illness and current mental illness. Further psychological distress is greater in the younger age group, in female participants and in participants having past or current mental illness. This findings corroborated with previous studies which revealed that demographic characteristics like age, gender, and family income have predicted stress and resilience, primarily in the context of security threats (Eshel & Kimhi, 2016; Marciano, et al., 2019). Further studies revealed that during the COVID-19 pandemic specifically, women have been shown to be more likely to develop psychological problems and distress, including anxiety, depression, and somatization (N. Liu, et al., 2020; Sfendla & Hadrya, 2020). This may be have developed because of the added responsibility most of them have been automatically assigned to because of absence of domestic help, children not going to school, husband working from home, other family members being mostly confined at home, etc. all of which increased the amount of work manifolds. Since women in the Indian society are expected to manage majority of the workload in the home front, this lifestyle change may have imposed much stress to them. For working women this added work pressure may have made it difficult for them to balance household chores along with office work. The greater psychological distress in the younger population corroborated with previous researches which suggested that during stressful events (valid in the context of the current pandemic) younger adults are more exposed to social media and news, as a consequence of which there is more anxiety, depression, and somatization (Qiu, et al., 2020; Sfendla & Hadrya, 2020). Older individual in the current survey may have been able to handle the COVID-19 crisis better owing to their immense experience of witnessing adversities in life. Again past and current mental illness may compromise our coping capability and hence may lead to the experience of greater psychological distress. The survey also found that age, gender and current mental illness are significant predictors of psychological distress during the second wave of the pandemic in India.

The survey revealed that there is significant difference in resilience score, hope total score, presence of meaning score and search for meaning score with various levels of psychological distress (well, mild, moderate and severe). Lower level of resilience has been linked to higher level of psychological distress and this indicates that people who are having difficulty to fight back whenever they face difficulty are more vulnerable to experience psychological distress including anxiety, depression etc. Loss, apprehension and worry may have overwhelmed these individuals inhibiting positive adaptation and optimistic thinking. Previous researches related to COVID-19, have also associated lower resilience to severe stress and anxiety, greater worry and poorer mental health outcome (Killgore, et al., 2020). Again with the increase in psychological distress the mean scores of hope total score have been found to decrease indicating that there may be difficulty in forming mental representations of positively valued, abstract future situations. Emotional component of hope comprises of having the trust to overcome adversity which comes in the path of achieving goals which may be influenced by our previous experiences with others and external events (Erikson. et al., 1994). This trust in the current scenario may be altered by the depressive and anxious thoughts related to psychological distress. These distressful thoughts may further affect the planning to achieve desirable future goals of these individuals as well as the expectations to fulfil those goals. Hence both cognitive and emotional elements of hope may be impacted (Lazarus, 1991; Snyder, 1994) leading to low hope total scores. Further results indicated that presence of meaning in life decreased and search for meaning increased in the participants of the survey. This may indicate that the pandemic and it uncertainties have led to

the realisation of human beings' futile attempts at materialistic pleasure at the cost of ignoring virtues of life which are more meaningful. This may have led to viewing lives as insignificant and purposeless (Steger, 2009) leading to low scores in presence of meaning scale. Along with this the results indicated an active attempt to engage in comprehending meaning, significance, and purpose in life by the participants (Steger et al. 2008) leading to high scores in search for meaning subscale. The days of isolation and quarantine may have provided the opportunity to people to put a halt to their fast paced lives and reflect upon things that were more meaningful in their lives. Hence the current survey reveals that during the second wave of the pandemic a lesser hopeful outlook and finding meaning from suffering may have been interlinked resulting in compromised resilience in participants who experienced greater levels of psychological distress.

The current survey also facilitated in identifying the predictors of psychological distress during the second wave of the pandemic in India. Resilience, age, current mental illness and gender were found to predict psychological distress in the participants. Younger individuals and female gender have been found to experience greater psychological distress which is similar to previous researches related to COVID-19 distress (Qiu et al., 2020; Sfendla and Hadrya, 2020; N. Liu et al., 2020). Younger individuals may be more exposed to social media and news which may culminate to greater experience of depression and anxiety and hence psychological distress. Again older individuals may have witnessed more number of adverse life circumstances which may have helped them to adapt with the adversity better. Further younger individuals may be more actively involved in providing care and support to themselves as well their family while the older individuals may have been more on the receiving end. Women participants in the survey were more prone to develop psychological problems and distress since they may have experienced greater challenges due to increase in household responsibilities without the presence of domestic help, home confinement of their school age children, conflicts with spouse, greater demands from members of family, etc. Women experienced these challenges more than men as in the Indian sociocultural context they are expected to fulfil these role mostly alone. Presence of mental illness may make people especially vulnerable to psychological distress as their capacity to handle adversity is not optimum like the non-affected individuals and hence may lead to it being a predictor of psychological distress. Among all resilience emerges as the strongest predictor of psychological distress which was supported by previous researches which have also found resilience as one of the foremost predictor of COVID-19 anxiety (Kimhi et al, 2020).

CONCLUSION

The current survey found significant differences in resilience, hope, presence of meaning and search for meaning with respect to severity of psychological distress experienced during the second wave of the pandemic in India. Further resilience, age, current mental illness and gender emerged as the predictors of psychological distress in the participants. Hence fostering resilience, generating hope and adequate identification of life's meaning in the therapeutic milieu along with being sensitive to the variations of age, gender and presence of mental illness may alleviate the experience of psychological distress and proselytise positive mental health in the current scenario.

Limitation

The limitations of the present survey were that a larger sample from various states of India could have led to better generalizability of results, may have led to greater generalisation, the survey could not include individuals of the other gender and the participants mostly belonged to the urban background.

Conflicts of Interest: The authors declare no conflict of interest.

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Original Research Article

Psychometric Properties and Standardization of Hindi Translation of Positive and Negative Affect Schedule (PANAS) in an Indian sample

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ABSTRACT

This study was conducted to establish the construct, convergent and predictive validity of Hindi translation of Positive and Negative Affect Schedule (PANAS) in Hindi speaking Indian cultural context. For the purpose 17 to 65 years old 396 men and women participants with minimum High School education from Varanasi city of Uttar Pradesh, India, completed the Hindi translation based on PANAS, BDI-II, SWLS and PSS-10. Factor analysis (principal components) of PANAS by applying Varimex rotation method two factors - Positive Affect and Negative Affect with 10 items in each, and finally, confirmatory factor analysis by AMOS also indicated a two factor model with an acceptable goodness of model fit on 20 items. The content of 10 items of the first factor and 10 items of second factor yielded two behavioral components i.e., Positive Affect and Negative Affect. The psychometric properties of the Hindi translation of PANAS demonstrated good internal consistency with high reliability, construct, and convergent validity. No gender differences appeared on both positive and negative affect, however, younger as compared to older participants displayed significantly more positive affect. These findings indicated that the Hindi translation based on PANAS may be considered as a reliable and valid measurement of affect in Hindi speaking Indian population7.

Keywords: *Positive affect, Negative affect, PANAS, Standardization- Hindi translation,*

INTRODUCTION

One of the essential reasons of human existence is happiness, often known as subjective well-being (Arthaud-Day et al., 2005). It is made up of two parts: positive and negative affect, and life satisfaction (Andrews & Withey, 1976; Lucas, Diener & Suh, 1996; Seligson et al., 2003, 2005). Positive Affect (PA) and Negative Affect (NA) are the two most common variables that define emotional experience (NA) (Watson, Clark & Tellegen, 1988). Positive affect described pleasurable engagement, such as feelings of enthusiasm, excitement, activity, and determination, whereas negative affect explained unpleasant involvement, such as anxiety, worry, guilt, and humiliation. Positive affect has received less attention in the literature than negative affect in the past, with academics becoming increasingly interested in the positive side of affect in the late twentieth century.

Although depression is explicitly characterized by low levels of positive affect and anxiety by physiological hyper arousal, the tripartite model (Clark & Watson, 1988) and the model elucidating anxiety and depression share negative affect as a common factor, both have associations with positive and negative affect. By emphasizing that both disorders contain a negative affect component, this idea gives light on the common comorbidity of anxiety and depressive illnesses (De Beurs, et al., 2007). The Dynamic Model of Affect (Reich, Zautra, & Potter, 2001; Reich, Zautra, & Davis, 2003) proposed that the structure of affect changes depending on the situation, such as in low stress, people can focus their cognitive assets and process more information–on their affective complexity–while in high stress, cognitive assets are depleted, implying a depletion of cognitive resources. As a result, happy and negative affect become increasingly inversely related when stress levels are high. As indicated by several studies that show a negative link between PA and NA across cultures, positive and negative affect have an ambiguous relationship (Crawford & Henry, 2004; Crocker, 1997; Tellegen, Watson, & Clark, 1999; Terraciano, McCrae, & Costa, 2003). Certain studies, on the other hand, categorize PA and NA as distinct phenomena (Watson & Tellegen, 1985; Watson et al., 1999).

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, and Tellegen, 1988) is presently the most extensively used tool in both clinical and non-clinical contexts to assess PA and NA. Spanish (Joiner et al., 1997; Robles & Paez, 2003), German (Krohne et al., 1996), Russian (Balatsky & Diener, 1993), Dutch (Hill et al., 2005), Turkish (Gencoz, 2000), and Italian (Terracciano, McCrae, & Costa, 2003) are the languages. Due to the PANAS' broad applicability, researchers have developed short versions suitable for youngsters (Mackinnon et al., 1999), enlarged versions (Watson & Clark, 1994; Laurent et al., 1999; Yamasaki, Katsuma, & Sakai, 2006), multinational versions (Thompson, 2007). Many cross-cultural studies have shown that people of diverse cultures have different emotional perceptions, experiences, and expressions. Panday and Srivastava (2008) primed the Hindi Version of Positive and Negative Affect Schedule (PANAS-H), which is psychometrically adequate and has satisfactory reliability and validity (exploratory factorial validity) but did not report confirmatory factor analyses or convergent validity, as Panday and Srivastava (2008) suggested for further research. Because psychological tests of proven psychometric adequacy for a given population can be transported and used for measurement in an Indian cultural milieu, the current study aimed to elucidate the I

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psychometric properties, (ii) construct and convergent validity, (iii) gender and age differences for predictive validity of Hindi translation of positive and negative affect schedule in an Indian cultural milieu.

METHODS

Participants and procedure

A total of 396 people aged 17 to 65 years (mean age = 31.73 years; SD = 9.65) with at least a High School diploma were conveniently sampled from Chowk and surrounding areas of Varanasi, Uttar Pradesh (174 males, mean age = 30.71 years, SD = 9.78, and 222 females, mean age = 32.54 years, SD = 9.50). (SWLS). According to the demographic characteristics, 56.3 percent, 42.7 percent, 0.3, and 0.8 percent of participants were married, unmarried, separated, and widow/widower, respectively; 73.2 percent and 26.8 percent of participants came from urban and rural backgrounds, respectively; and 57.8 percent and 42.2 percent of participants came from joint and nuclear families, respectively. Along with PANAS, another group of 200 individuals (100 men, mean age 42.45 years, SD = 16.29, 100 women, mean age 42.29 years, SD = 13.54) completed the Beck Depression Inventory-II and Perceived Stress Scale-Hindi (PSS-10) tests. 68.0 percent, 25.0 percent, 0.5 percent, and 6.5 percent of the 200 participants were married, unmarried, separated, or widow/widower, respectively; 92.0 percent and 8.0 percent of the participants came from urban and rural backgrounds, respectively; and 60.5 percent and 39.5 percent of the participants came from joint and nuclear families, respectively.

The Departmental Research Committee (DRC) of the Mahatma Gandhi Kashi Vidyapith, Varanasi, India, gave their approval to the protocol. All participants signed a written informed consent form in accordance with the Helsinki Declaration of 1964 and its revisions, or comparable ethical norms. There were no monetary rewards for taking part in the study. Participants who had given their informed consent were individually administered the questionnaires in a paper-and-pencil format with written instructions.

Positive Affect and Negative Affect Schedule

The Hindi translation based on PANAS (Watson, Clark, & Tellegen, 1988) was employed in this study. The PANAS is a scale that measures (i) Positive Affect (PA), which is a person's level of enthusiasm, activity, and alertness. High Positive Affect (PA) is characterized by an elevated level of energy, complete concentration, and enjoyable participation, and (ii) Negative Affect (NA) spans a wide range of adverse mood states and is a general dimension of subjective distress and un-pleasant engagement. Anger, contempt, disgust, guilt, anxiety, and anxiousness are linked to low PA, whereas sadness and lethargy are linked to high NA. A sense of peace and security is related with a low NA. The PANAS is a 20 item scale consisting of two scales namely Positive affect and Negative Affect with 10 items in each scale. The participants were asked to rate on a 5-point scale the extent to which they had experienced each mood state during past few weeks. The rating points of the scale were 1- very slightly or not at all, 2- a little, 3- moderately, 4- quite a bit and 5- very much and the ratings were scored from 1 to 5, respectively. Watson, Clark and Tellegan (1988) have reported alpha reliability of 0.87 for both PA and NA test-retest reliability of 0.58 and 0.48 for PA and NA respectively for time instruction of ‘during past few weeks’. With prior permission of Dr. David B. Watson, the Hindi translation of the scale based on PANAS was created using a back-translation procedure involving one well-versed and native speaker of both the languages and the authors to ensure the content equivalence.

Beck Depression Inventory-II (BDI-II)

Hindi translation of BDI-II was used (Rani, 2011). The most recent version of the BDI (BDI-II) (Beck, Steer, & Brown, 1996) was created to accommodate revisions in the DSM-IV Major Depression criteria (APA; 1994). BDI-II consists of 21 groups of statements for 21 symptoms. Items are organized according to the severity of the content of alternative statements and each symptom is rated on a 4-point scale ranging from 0 (not) to 3 (severe) which covers cognitive, emotional/affective and somatic/vegetative symptoms with no sub scale and total scores can range from 0 to 63. More severe depression is indicated by higher scores (Beck, Steer, & Brown; 1996). Several studies have proven the validity and reliability of BDI-II in different populations and settings (Gebrie, 2018). Smith and Erford (2001) reported and Smarr and Keefer (2011) reported Cronbach’s α of 0.92 and 0.93 for outpatient population and college students, respectively.

Satisfaction with Life Scale

The Hindi version of Satisfaction with Life Scale (SWLS-H; Jaiswal et al., 2020) was utilized in this study. Diener et al., (1985) were the creators of this scale. It consists of five items that assess an individual's life satisfaction on a seven-point Likert scale (from strongly agree to strongly disagree), with a score range of 5 to 45. Jaiswal et al., (2020) have reported coefficient alpha of 0.74 for Hindi version and Diener et al., (1985) have reported coefficient alpha of 0.87 for the original SWLS and adequate convergent validity has been demonstrated in both studies.

The Perceived Stress Scale

The Hindi version of the Perceived Stress Scale-10 (PSS-10; Jaiswal et al., 2021) is a ten-item scale that measures how stressful life events are perceived. The PSS-10 was designed to determine how unpredictable, unmanageable, and overburdening respondents' lives were at the time (PSS-10; Cohen, Kamark & Mermelstein, 1983). The measure also includes several questions about current stress levels. The PSS questions focus on the previous month's feelings and ideas. In each situation, respondents are asked how often they feel a certain way. The Hindi version of PSS-10 has two subscales ‘Uncontrollable Perceived Stress’ (UPS) and ‘Controllable Perceived Stress’ (CPS) having six unfavourably worded items and four favourably worded items, respectively. Four favourably worded items are reverse scored. The items are scored on a 5-point Likert scale, with 0 indicating never, 1 indicating ‘almost never’, 2 indicating ‘sometimes’, 3 indicating ‘fairly often’, and 4

indicating 'very often'. Higher total scores on both UPS and CPS subscales indicate elevated level of perceived stress, however, both scales have been observed to be independent of each other. The confirmatory factor analysis of Hindi version of PSS-10 has indicated an adequate goodness of fit indicating good construct validity and it has an acceptable reliability and convergent validity (Jaiswal et al, 2021). The alpha coefficient for reliability ranged from 0.74 to 0.91 for PSS-10 and from 0.75 to 0.89 for PSS-14 in the broader literature (Lee, 2012).

Statistical Analyses

SPSS version 20 was used to calculate descriptive statistics, correlation analyses, and internal consistency. Pearson's correlation was used to investigate the relationships between the Positive Affect and Negative Affect Schedule (PANAS) and other measures. Confirmatory factor analysis (CFA) was performed using AMOS 20 and the maximum likelihood (ML) approach. The analyses included (i) factor analysis, (ii) average item total coefficients of correlations, (iii) reliability indices (split-half reliability coefficients corrected by the Spearman–Brown prophecy formula and Cronbach's alpha coefficients), (iv) relationships between the factors, (v) construct, convergent, and predictive validity of the test scores by confirmatory factor analysis and highlighting gender and age differences on factors of PANAS.

RESULTS

The Kaiser-Meyer-Olkin sample adequacy score was found to be 0.882, and Bartlett's sphericity test was found to be significant (Chi square = 2266.26, df = 190, $p < 0.001$). Factor analysis (principal components) on the Hindi translation of PANAS with varimax rotation and loading of 0.300 or greater, an Eigen value of 1.00, and a Scree plot revealed two factors: the first factor explained 21.65 percent of variance and the second factor explained 19.91 percent of variance, respectively, and the two factors together explained 41.55 percent of variance. The first factor (PA) included ten items (numbers 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19), whereas the second factor (NA) had ten items (numbers 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20). The results revealed negligible relationship between PA and NA (r = -0.102). The average item-total coefficients of correlations for PANAS subscales were found to be high indicating common variance among them. The reliability coefficients of the PANAS for NA and for PA emerged remarkably high (Table 2).

Construct Validity

The construct validity was assessed by Confirmatory Factor Analysis (CFA). The Hindi translation based on PANAS was assumed to be made up of two factors. However, the Chi-square test of overall model fit was significant (2 (df = 169, N = 396) = 335.905, p 0.001) when CFA was done for a first order factor structure in PANAS. The fit indexes were found to be satisfactory (RMSEA = 0.050; CFI = 0.921; GFI = 0.916; AGFI = 0.895; TLI = 0.911; SRMR = 0.053), and the structure equation model fit was also appropriate and acceptable (Figure - 2). For a consistent model, RMSEA should be less than 0.05 and other indexes (such as AGFI, CFI, and GFI) should be less than 0.90. (Byrne, 2001; Hayduk, 1987; Scott, 1983; Kelloway, 1988). As a result, factor structure of the Hindi form of the PANAS has an acceptable model fit indices and findings confirm the construct validity of PANAS.

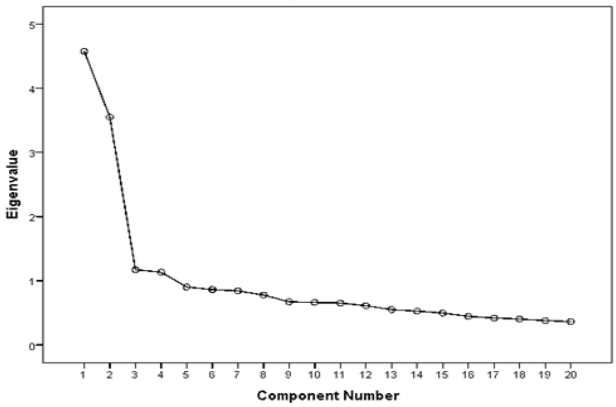

Figure 1: The Scree plot for 20-items PANAS

Table 1: Item loadings of factors of PANAS in rotated component matrix

Item No.	एकांश	Component PA	Component NA
9	उमंग एवं उत्साहपूर्ण अनुभव किया है।	0.745	
1	रुचिकर अनुभव किया है।	0.699	
5	सशक्त या समर्थ अनुभव किया है।	0.664	
19	स्वयं को क्रियाशील अनुभव किया है।	0.660	
14	स्वयं को प्रेरित (अतःप्रेरित) अनुभव किया है।	0.650	
10	गौरवान्वित अनुभव किया है।	0.648	
16	दृढ़ता का अनुभव किया है।	0.647	
3	उत्साहित अनुभव किया है।	0.633	
17	एकाग्र अनुभव किया है।	0.600	
12	स्वयं को सतर्क अनुभव किया है।	0.562	
7	आशंकित (डरा हुआ) अनुभव किया है।		0.727
20	भयभीत अनुभव किया है।		0.690
11	चिड़चिड़ापन का अनुभव किया है।		0.679
4	अशान्त या परेशान अनुभव किया है।		0.646
2	दुःखित या व्यथित अनुभव किया है।		0.636
18	हैरान–परेशान अनुभव किया है।		0.634
15	घबराहट (व्यग्रता) का अनुभव किया है।		0.606
13	शर्मिन्दा (लज्जित) अनुभव किया है।		0.596
6	अपराध बोध का अनुभव किया है।		0.579
8	शत्रुतापूर्ण (विद्वेषपूर्ण) अनुभव किया है।		0.399

Table 2: Mean ± SD values of PA and NA and indices of internal consistency and reliability (N= 396)

PANAS measures	Mean ± SD	Average item-total coefficients of correlations	Reliability coefficients Split -half	Cronbach's α	Guttman lambda
PA	31.70 ± 8.42	0.65	0.85	0.85	0.85
NA	20.84 ± 7.36	0.62	0.85	0.82	0.83

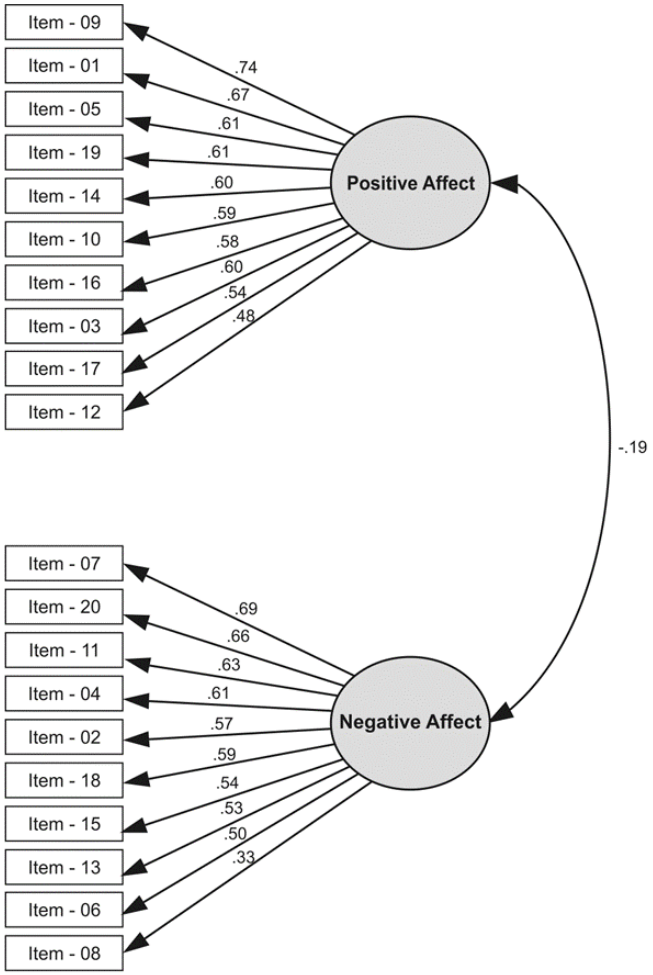

Figure 2: Confirmatory Factor Analysis of Hindi Version of Positive Affect and Negative Affect Schedule : Path diagram and Standard estimates

Convergent validity

Results indicated that the negative affect significantly and negatively correlated with satisfaction with life and controllable perceived stress, and significantly and positively correlated with uncontrollable perceived stress and depressive symptoms whereas positive affect correlated positively with satisfaction with life and controllable perceived stress, and negatively with BDI-II and uncontrollable perceived stress (Table 3).

Table 3: Relationships between positive affect and negative affect measures, and with BDI-II PSS-10, SWLS-H and measures of PSS-10

Measures	PA	NA
BDI-II (N= 200)	-0.220**	0.394**
SWLS-H (N = 396)	0.187**	-0.226**
PSS-10 (N=200)		
Controllable Stress	0.245**	-0.212**
Uncontrollable Stress	-0.081	0.448**

* and ** respectively indicate $p < 0.05$ and $p < 0.01$

Gender Differences

The gender differences in positive and negative affect were determined using ANOVA. Table 4 shows the mean and SD values of PA and NA for men and women participants. The gender effect on positive affect ($F(1, 394) = 3.81$, $p > 0.05$) and negative affect ($F(1, 394) = 0.54$, $p > 0.05$) was not significant, implying that men and women did not differ significantly on PA and NA.

Table 4: Mean ± SD values of PA and NA for men and women

Factors	Gender	N	Mean ± SD
PA	Men	174	32.63 ± 8.38
	Women	222	30.97 ± 8.40
NA	Men	174	20.74 ± 7.61
	Women	222	20.91 ± 7.18

Age differences

ANOVA was used to investigate the effects of age on PA and NA measures, with age as the independent variable and PANAS subscale scores as the dependent variable. The participants were divided into two age groups: younger (under 31 years) and older (over 31 years), and the results of the PA and NA mean, and SD values are shown in Table 5. The analyses revealed significant main effects of age for PA ($F(1, 394) = 5.43$, $p > 0.05$) and NA ($F(1, 394) = 1.70$, $p > 0.05$), indicating that younger participants had significantly higher positive affect than older participants. However, there was no significant difference in negative affect between younger and older participants.

Table 5: Mean ± SD values of PA and NA for younger and older participants

PANAS factors	Age Groups	N	Mean ± SD
PA	Younger	234	32.51± 8.31
	Older	162	30.52 ± 8.48
NA	Younger	234	21.24 ± 7.41
	Older	162	20.26 ± 7.27

DISCUSSION

The study indicated that the Hindi translation of the scale based on PANAS had a satisfactory level of reliability and validity in a sample of Hindi-speaking Indian participants. Analyses demonstrated that the positive and negative affect dimensions of the Hindi translation based on PANAS had excellent internal consistency in terms of average inter-item total coefficients of correlations and reliability coefficients. The means for PA (31.70) and NA (20.84) are like the means reported by Watson, Clark and Tellegan (1988) for

PA (32.0) and NA (19.5) for time instruction of 'during past few weeks'. The alpha reliabilities are also remarkably high for PA (0.85) and NA (0.82) similar like that observed by Watson, Clark and Tellegan (1988). Moreover, we also report high split-half and Guttman lambda reliability values for both NA and PA scales of PANAS. The CFA of the PANAS Hindi translation produced good model fit indices and is identical to the original Positive and Negative Affect Schedule (Watson, Clark, & Tellegan, 1988) and other PANAS investigations (Crawford & Henry, 2004; Joiner et al., 1997; Lim et al., 2010; Merz et al., 2013; Merz & Roesch, 2011; Terraciano et al., 2003; Crocker, 1997). In the current study, the association between NA and PA was discovered to be weak and Watson, Clark and Tellegan (1988) also reported extremely low correlation between PA and NA. Cultural differences have been noted in the relationship between NA and PA. Some studies have found negative relationships between NA and PA, such as both being two opposite poles of the same paradigm (Feldman & Russell, 1998; Russell & Carroll, 1999), while others have found an orthogonal relationship, implying that the two dimensions are independent of one another (Feldman & Russell, 1998; Russell & Carroll, 1999; Diener & Emmons, 1984; Watson & Tellegen, 1985; Watson, Wiese, Vaidya, & Tellegen, 1999; Billings et al., 2000; Crocker, 1997).

Satisfaction with Life Scale was designed to assess an individual's global judgment of life satisfaction and positive affect correlated positively with satisfaction with life scale in the present study like earlier reports (Singh & Jha, 2008; Bakalm & Karckay, 2015; Mantelou & Karakasidou, 2017) and negative affect correlated negatively with SWLS consistent with the observations of Larsen, Diener and Emmons (1985). Positive affect and negative affect correlated negatively and positively with BDI-II but the correlations are moderate, consistent with previous findings that depressive symptomatology is affectively complex (Tellegan, 1985; Watson & Clark, 1984; Watson, Clark & Tellegan, 1988). Negative affect also negatively associated with controllable perceived stress and positively associated with uncontrollable perceived stress, however, positive affect only correlated positively with controllable perceived stress and these findings are in congruence with earlier reports where NA scale (but not PA scale) was significantly related to perceived stress (Clark & Watson, 1986; Leeka, 1987); therefore, these findings approve convergent validity of the Hindi translation of PANAS. The results also revealed non-significant gender differences on NA and PA, and Watson, Clark and Tellegan (1988) also observed inconsistent sex differences on both PA and NA, however, Cerkez et al., (2019) discovered gender disparities in adolescents where men reported more positive affect and women displayed more negative affect. Moreover, younger as compared to older participants displayed significantly more positive affect and similar observations were also made by Raes et al., (2015).

The findings of the present study demonstrate excellent construct, convergent and predictive validity of the Hindi translation based on PANAS that measures the two primary dimensions of mood - positive affect and negative affect. The 10 items of each PA and NA elicited high internal consistency and discriminant correlation with other underlying measure of mood i.e., BDI-II and with life satisfaction and perceived stress.

Before drawing any general conclusions, it's crucial to note the study's shortcomings, which should be addressed in future research. The findings of the present study demonstrated adequate reliability, construct, and convergent validity in a normative sample for a time instruction of past few weeks, however, studies are needed on both clinical and nonclinical samples employing other measures of mood, anxiety, psychosis, and personality components at various time instructions like now, today, past few weeks and past year. The findings also suggest that Hindi translation based on PANAS could be useful in determining the reasons of various mental status in positive and negative psychological situations in everyday life.

Conflicts of Interest: The authors declare no conflict of interest.

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Original Research Article

Is Stress, Anxiety and Depression Salient in Arsenic-Induced Cancer?

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ABSTRACT

Arsenic contaminated groundwater is a major public health problem in the Indo-Gangetic plains. Situation is worst in Bihar where 17 out of 38 districts are arsenic prone. Arsenic-induced cancer is the most prevalent fatal disease reported here. Unfortunately, the literature is depleted of findings about its' psychological consequences. Objective of the study is to explore depression, anxiety and stress level of arsenic-induced cancer patients from arsenic affected gangetic plains of Bihar state. Comparative survey research was conducted with a sample of 112 participants (aged 32 - 60 years) drawn through purposive sampling. Out of which 52 were arsenic-induced cancer patients (without visible symptoms of arsenicosis) from middle gangetic arsenic prone area and 60 were healthy counterparts from non-arsenic districts of Bihar. Depression, stress and anxiety was assessed with Hindi adapted version of depression, anxiety and stress scales. Descriptive statistics (Mean & SD) and inferential statistics (t-test) were applied. The two groups were significantly different on the three emotional states of depression (t-value=6.986, p <0.001), anxiety (t-value=6.833, p <0.001) and stress (t-value=7.540, p <0.001). Anxiety, depression and stress were comparatively higher in the arsenic-induced cancer patients. The emotional states of arsenic-induced cancer patients are relatively poor thus salient and warrant immediate attention from the policy makers and service providers. This research provides base line findings related to stress, anxiety and depression experienced by arsenic-induced cancer patients. Further, could help policy makers to conceptualize and promote psychological interventions for this population keeping their emotional states in mind.

Keywords: *Arsenic-induced cancer, stress, anxiety, depression, groundwater arsenic contamination, middle gangetic plain*

INTRODUCTION

Arsenic (As) is the most commonly known factor for causing cancer in human. It is commonly considered the largest mass poison in human history. Arsenic affects almost every organ in the body. Most common public health problem emerging from groundwater arsenic contamination are skin lesion and many types of diseases like cancer not only limited to skin, cardiovascular diseases and respiratory diseases. Considering the catastrophe from it, two standards are proposed to limit the amount of arsenic in drinking water, one is proposed by World Health Organization (WHO, 2011) that is 0.01mg/l and another proposed by Bureau of Indian Standards (BIS, 2012) that is 0.05 mg/l.

Well, the whole world is facing challenges due to arsenic contamination but Asian regions are much more affected than any other country. In the latest estimation there are more than 7 crore affected cases in India only of which Ganga Basin has the majority of people situated in it (Chatterjee, 2014). Bihar is the most affected state among all states in India where 22 districts are identified as arsenic prone out of 38 districts (Mishra et al., 2016). Some districts are found to have high level of arsenic contamination in ground water, major source of drinking water, for example, Patna, Bhagalpur, Samastipur, Bhojpur, Begusarai, Vaishali, Khagaria, Saran, Katihar, Munger, Siwan, Darbhanga, Lakhisarai, West Champaran, Kishanganj and Supaul.

Cancer is the most prevalent and fatal diseased condition of this region (Morales, Ryan, Kuo, Wu & Chen. 2000; Marshall et al. 2007; Smith & Steinmaus 2009) due to long term exposure and intake of arsenic contaminated water. Diseases from arsenic is not only limited to cancers but may also include white or black spots in the body, keratosis, hyperkeratosis and melanosis (Guha Mazumdar, 2003; Rahman, Ng & Naidu, 2009.) gangrene, non-pitting oedema, dorsum, skin lesions and other malignant neoplasms skin cancer (Chakraborti et al., 2003; Lindberg et al., 2008; Pierce et al., 2011), Peripheral artery disease (PAD), reproductive disorders and probably diabetes (Chattopadhyay, Bhaumik, Chaudhury & Gupta, 2002; Chakraborti et al., 2003; Zimmermann, Krause & Chowdhury, 2015; Mayer & Goldman, 2016) and high blood pressure (WHO, 2011).

Ground water arsenic contamination not only affects person's physical health but it also affects person's personal, social and emotional wellbeing. Arsenicosis patients and their family faces so many social injustices such as discrimination, prejudice, isolation, instability, marital and job-related problems (Hassan et al., 2005; George et al., 2013; Rahman, Rahman, Khan & Renzaho, 2018). Major depressive disorder is likely to have 3 to 5 times more evident in cancer patients than non-cancer patients (Linden, Vodermaier, Mackenzie & Greig, 2012; Hartung et al., 2017). Memory loss and emotional liability are the result of acute toxicity of inorganic arsenic and depression is the result of long-term exposer of arsenic with the neurotransmitters stated by The Agency for Toxic Substances and Disease Registry (ATSDR, 2007). Due to chronic diseases person feels anxiety, fear and disorganization most commonly (Aspinwall, 2004). Also, high level of weakness, depression, restlessness, insomnia,

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loss of appetite and drowsiness are some symptoms found in arsenicosis patient (Khan, Aklimunnessa, Ahsan, Kabir & Mori, 2006)

Rationale of the study

In the light of above presented literature it could be concluded that ground water arsenic contamination is a global public health concern (Khan, Sakauchi, Sonoda, Washio & Mori, 2003; Chowdhury, 2004; Mukherjee, et. al., 2006; Thakur, Thakur, Ramanathan, Kumar & Singh, 2010) but in Bihar problem is catastrophic (Chakraborti et al. 2003; Ghosh et al., 2007, 2009). Many studies (Chattopadhyay et al., 2002; Chakraborti et al., 2003; Zimmermann, Krause & Chowdhury, 2015) have been done to know the prevalence and its effects on physical health of the individuals but when it comes to the psychological or emotional aspect very less studies are found. The effects of arsenic on emotional health are also vital to be studied for its effective remediation. Therefore, this correlational study aimed to explore the three emotional states (viz. stress, anxiety and depression) in arsenic-induced cancer, prevalent in the middle Indo-Gangetic plains of Bihar.

METHOD

Hypothesis

There would be no significant difference in the depression, anxiety and stress level of arsenic-induced cancer patients and their healthy counterparts.

Study design and sample

An appropriate scientific and empirically sound method was adopted to meet the study objective. The present study follows a correlational research design. Sample comprised of 112 participants (aged 32 - 60 years) drawn through purposive sampling. Out of which 52 were arsenic-induced cancer patients (without visible symptoms of arsenicosis) from middle gangetic arsenic prone area and 60 were healthy counterparts from non-arsenic districts of Bihar.

Measures

i. Socio-demographic and Clinical data sheet: A semi-structured format for obtaining information on socio-demographic variables such as gender, age, education, residential area, father education, father occupation and father annual income and number of family members of the participants of the study. It also contains information regarding previous clinical complaints.

ii. Depression, anxiety and stress scales - 21 (Singh, Prabhuappa, Eqbal & Singh, 2013): DASS-21 is the Hindi adapted short version of a 42-item (Lovibond, & Lovibond, 1995) self-report measure of three related negative emotional states namely anxiety, depression and stress. It is a 4-point rating scale (0–3), "0" denoting "did not apply to me at all" and "3" denoting "applied to me very much/most of the time." The reliability of the scale was tasted by Cronbach alpha. The Cronbach's alpha for Depression (Hindi =0.70; English =0.76), Stress (Hindi =0.63; English =0.71) and Anxiety (Hindi =0.74; English =0.73) were acceptable.

Procedure

Participants were drawn through purposive sampling method. In the *first phase* of data collection arsenic-induced cancer cases were identified based on their differential diagnosis done by clinicians/researchers at Mahavir Cancer Sansthan and Research Centre. The differential diagnosis was based on the respective clinical history for presence of arsenicosis. Prominent biomarkers for arsenic were seen in different parts of the body like hair, nails, blood by the researchers of the cancer centre.

These participants were residents of middle gangetic plains for more than 10 years and not suffering from any chronic diseases other than cancer. In the *second phase* of data collection a comparative healthy counterpart was drawn from the non-arsenic regions of Bihar. Proper rapport was established and objective of the present study was briefly explained to each participant. Informed consent was obtained from participanst before collecting the data. Throughout the process the ethical guidelines of American Psychological Association (APA, 2010) have been followed while dealing with participants of this study. Statistical analysis of the data was done with descriptive (Mean & SD) and inferential statistics (t-ratio) using SPSS version- 25.

Ethical Approval

Ethical approval was obtained from two ethical committees; firstly from the Research Degree Committee of the authors' department (DRDC), under the School of Human Sciences at Central University of South Bihar, Gaya. Secondly the ethical committee of Mahavir Cancer Sansthan and Research Center, Patna also approved the study for data collection from their esteemed institution.

Statistical analyses

Descriptive and inferential statistics has been used to analyze the data. For continues variables mean and for categorical variables standard deviation has been used. To examine the significant group mean differences inferential statistic of t-test has been used. All the analysis has been done by using SPSS (version 25).

RESULTS

Data of 112 participants were analyzed through SPSS (version25). Above mentioned result table reveals that, arsenic-induced cancer patients scored high on depression ($M = 5.7885$, $SD = 4.4692$), anxiety ($M = 5.6154$, $SD = 3.7529$) and stress level ($M = 8.2885$, $SD = 4.0455$), compared to healthy counterparts with scores for depression ($M = 1.3167$, $SD = 2.0042$), anxiety ($M = 1.6207$, $SD = 2.2697$) and stress ($M = 3.4167$, $SD = 2.7451$).

Further, result table also shows that this difference is statistically significant ($p < 0.01$) for all three forms of emotional states i.e., depression (6.986), anxiety (6.833) and stress (7.540). Hence, the results suggest to conclude that arsenic-induced cancer patients of arsenic prone area experience higher level of depression, anxiety and stress in their day-to-day life compared to healthy people from non-arsenic regions of Bihar.

Result table: Descriptive statistics (Mean & SD) and t-ratio comparing arsenic-induced cancer cases with their healthy counterparts from non-arsenic affected Bihar on related negative emotional states viz., anxiety, stress and depression

Emotional state	Sample	N	Mean	SD	t-ratio	Sig. value
Depression	Healthy person	60	1.3167	2.0042	**6.986**	0.001
	Arsenic - induced cancer patients	52	5.7885	4.4692		
Anxiety	Healthy person	60	1.6207	2.2697	**6.833**	0.001
	Arsenic - induced cancer patients	52	5.6154	3.7529		
Stress	Healthy person	60	3.4167	2.7451	**7.540**	0.001
	Arsenic - induced cancer patients	52	8.2885	4.0455		

DISCUSSION

This correlational study was conducted to compare arsenic-induced cancer patients with their healthy counterparts from non-arsenic affected Bihar state on their related negative emotional state (namely anxiety, stress and depression). Result gives a clear picture that arsenic-induced cancer patients from arsenic prone area has scored higher on depression as compare to healthy person from non-arsenic area of Bihar. Hence it can be said that cancer patients from arsenic prone area may face feeling of guilt, social withdrawal, sadness, suicidal preoccupation loss of interest in activity once enjoyed, worthlessness, feeling of hopelessness, lowered self-esteem etc. stress, anxiety and depression stands out salient among this population and thus needs immediate psychological interventions. There are some other studies that shows same finding as we found in this study. Previous study done in Bangladesh and China has shown that people affected with arsenic suffer from mental health problems such as depression more commonly (Brinkel, Khan & Kraemer, 2009). Some other studies (Raison & Miller, 2003; Linden, Vodermaier, Mackenzie & Greig, 2012; Hartung et al., 2017) found cancer patients having major depression three to five time greater than non-cancer patients.

Finding also shows that cancer patients without visible symptoms of arsenicosis from arsenic prone area has scored higher on anxiety as compare to healthy people of Bihar. Hence, it can be said that cancer patients without visible symptoms of arsenicosis from arsenic prone area may feel worried or fear about future, uneasiness, or cold.

Jadoon, Munir, Shahzad and Choudhry (2010) also found that among cancer patients depression and anxiety are more prevalent.

Stress level too was higher for arsenic-induced cancer cases compared to healthy person of Bihar. Hence, it can be said that cancer patients from arsenic prone area may face some physical problems (such as headaches, high blood pressure, chest pain and sleep problems) as well as emotional problems (such as depression, panic attacks and other form of anxiety and worry due to high stress). Some studies support the result of the present study as Ravindran, Shankar and Murthy (2019) found in their study that arsenic-induced cancer patients were hopeless and distressed and their QOL was significantly lower. Hence it can be said that people with cancer disease may feel no enjoyment in life or not appropriate for the society.

CONCLUSION

In the light of the above results, conclusions may be drawn about the much under-studied emotional states of arsenic-induced cancer patients of middle Gangetic plains of Bihar. Cancer patients from arsenic prone area may experience high level of depression, anxiety and stress as compared to healthy person of non-arsenic area in Bihar. Arsenic-induced cancer patients from arsenic prone areas of Bihar may face poor emotional states in terms of depression, anxiety and stress that calls for immediate attention and action from the policy makers and service providers to promote better psychological health at individual, societal and systems level. Stress, anxiety and depression are thus salient for arsenic induced cancer patients both in regard to early identification of their psychological sufferings as well as for planning effective treatment plan.

IMPLICATIONS:

- Provides base line findings for much under studied topic of stress, anxiety and depression in arsenic-induced cancer, prevalent in middle gangetic plains of Bihar.
- Further, could help policy makers to conceptualize and promote psychological interventions for this population keeping their emotional states in mind.

Conflicts of Interest: The authors declare no conflict of interest.

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Original Research Article

Perceived Social Support and Social Wellbeing among Borderline Personality Disorder Inpatients and Normal Control

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ABSTRACT

Borderline personality disorder (BPD) a severe mental disorder characterised by a pervasive pattern of instability in emotion regulation, interpersonal relationships, impulse control, and self-image. The aim of this study was to analyse the difference between BPD inpatients and normal control participants on perceived social support and social wellbeing.

Methods: A total of 178 participants completed the profile of multidimensional scale of perceived social support and social wellbeing scale.

Results: The result revealed a statistically significant difference between the two groups on the variables.

Conclusions: It was found that BPD inpatients scored lower on perceived social support and social wellbeing as compared to their counterparts. Understanding perceived social support is paramount in the backdrop of its significance in difficult situations or crises like stress, anxiety, depression, and other negative emotions. Hence, it is suggested that the friends and family members support to BPD inpatients should be encouraged because it plays a vital role for enhancing the wellbeing of these patients.

Keywords: *Borderline Personality Disorder, Negative Emotions, Social Support, Wellbeing, India*

INTRODUCTION

Borderline personality disorder (BPD) is an extensive pattern of disorder characterised by instability in emotional regulation, interpersonal relationships, impulse control, and self-image (American Psychiatric Association (APA), 2013). It is characterised by any of the five out of a total of nine criteria mentioned in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5). This disorder has received much attention owing to its association with suicidal ideation, impairments in psychosocial functioning, and high social and economic costs.

Since there is a consensus among the researchers that symptoms of BPD appear in adolescents yet, controversies also appear about the presence of the disorder in teens (Kaess et al., 2014). A good number of studies reveal that teens are also prone to BPD (Biskin, 2015). A group of experts working in this area also argue that BPD cannot be found in people younger than 18 years as their personalities are yet to be fully developed. However, in the recent version of DSM-5, there is a provision that allows diagnosis of this disorder among those of less than 18 years of age (American Psychiatric Association (APA), 2013). As per DSM-5 diagnostic criteria of BPD, there is no difference between teens and adults, and suicidal behaviour and tedious nonsuicidal self-injury (NSSI) are the central features of BPD characteristics. A history of repetitive self-harm behaviour dating back to childhood and adolescents among the adults diagnosed with BPD. Being the most frequent elements prevalent in these two characteristics namely suicidal behaviour and self-harm normally declines with age (Zanarini et al., 2008). As BPD features tend to decline over the period of time but functional impairment in adults remain stable, however more severe than major depression (Gunderson et al., 2011). According to Kaess et al. (2014), in addition of high correlation of BPD with other psychiatric as well as personality disorders it also includes a high burden on families and carers, nonstop resource utilization as well as excessive treatment costs. This association with other disorders creates a need for a unique approach to diagnose BPD. Some of the most frequently comorbid disorders with BPD are depression, bipolar disorder, schizophrenia, and attention deficit hyperactive disorder.

According to National Collaborating Centre for Mental Health, (2009), the primary difference between the symptoms of BPD and other disorders are: For example, psychotic and paranoid symptoms are transient, suicidal thoughts may be intense and unbearable but only for a short period of time, depressive symptoms change dramatically over a short period of time, identity doubts may occur but are transient, and disruptions in the continuity of self-experiences are unstable. These symptoms are all characteristics of BPD. The consistency of these symptoms is substantially higher for each of the comparable comorbid diseases.

BPD sufferers frequently experience unstable self-identity and self-image, difficulties controlling their emotions, impulsive and self-destructive behaviour, a fear of abandonment, a sense of emptiness, and a pattern of extremely unstable relationships with frequent idealisation and devaluation. They can have a history of abuse or neglect. BPD's root causes are frequently not fully understood. Some academics propose genetic connections based on family history, whilst others propose an environmental connection.

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There is a strong association of BPD characteristics with prenatal adverse conditions like maternal stress, drug abuse, tobacco smoking, or medical complications. Moreover, factors like marital conflict, family conflict, low social support, and medical complications also contribute to BP characteristics (Schwarze et al., 2013). Thus, a number of risk factors for pregnancies and early adversity may have a significant role in the development of BPD.

Researchers have revealed four main components to be the core traits of BPD, which include affective, interpersonal, behavioural, and self/cognitive (Becker et al., 2006; De Moor et al., 2009; Sanislow et al., 2009). It is found that these traits are also found in other non-BPD disorders. This comorbidity creates an immediate need for the development of a good theory which can address the fundamentals of these traits.

Social support refers to the "various forms of aid and assistance supplied by members of the family, friends, neighbours, and others" (p. 435), which broadly encompasses variety of social interactions (Barrera et al., 1981). Several components of social support as stated by (Barrera, 1986) are: social embeddedness, enacted and perceived support. Perceived social support means how people perceive family and other friends as the source of psychological, physical and social support at the time of emergency or need. It has been consistently related to well-being owing to its positive experiences like love, support, and care (Siedlecki et al., 2014; Uchino et al., 2012). Perceived support is a gratification with social conversation and projected support. Generally, researchers reveal that this type of support is linked to better outcomes at the time of stress. Perceived social support is found as a unique predictor of depression and is correlated with higher life satisfaction (Newsom & Schulz, 1996; Wethington & Kessler, 1986).

Personality disorders are associated with functional impairments. It is well-known that patients with personality disorder have impairment in physical and emotional functioning. As patients of BPD struggle with painful thoughts and beliefs about themselves as well as other, it also remains to be hurdle in their personal life, family life as well as social life. Well-being is a condition of an individual, which can be good or bad. A higher level of well-being reflects that a person's condition is more positive, whereas the lower level suggests the otherwise. Well-being is the organised dimension of physical, mental, and social well-being that extends beyond traditional definition of health (Naci & Ioannidis, 2015). According to the WHO (1984), social well-being is a central component of individuals overall health. It is a capacity of the people to be free from want of basic requirements and to coexist peacefully in communities with opportunities for advancement. it's the tip state of the fundamental needs like water, food, shelter, and health services**.** The personality disorders are also known to be associated with functional impairments. It is noteworthy that co-occurring personality disorder contributes significantly to impairment in social and emotional functioning and reduces well-being in patients with major depressive disorders (Skodol et al., 2005)**.**

Aim of the study: The aim of this research work is to examine the difference between BPD inpatients and normal control participants on perceived social support and social wellbeing**.**

METHODS

Participants and Procedure

One hundred seventy-eight people 80 (BPD) and 98 (Normal) participated in this study. BPD inpatients were taken from OPD of JNM College, Aligarh Muslim University, Aligarh-India, where as the normal control participants were taken from different places of Aligarh. The mean age of the participants was calculated as 21.53. In case of BPD inpatients, the duration of illness was more than 6 months.

A cordial rapport was established with all the participants including normal control participants. They were requested to provide the preliminary information. Followed by this, all the respective scales were administered to the participants. Participants were advised to read the instructions carefully and provide their responses candidly. After the completion of the process, they were thanked for their cooperation and asked to leave.

Measures

Perceived Social Support:

Perceived social support, developed by (Zimet et al., 1988) was used to measure the perceived social support among the respondents. It is a 12-item measure with 7-point rating rate measuring three 4-item subscales namely family, friends, and significant others. A higher score in each of these scales shows a higher quality of perceived social support. The scale showed good internal reliability across subject groups (Canty-Mitchell & Zimet, 2000; Zimet et al., 1990). The reliability as reported by the author of the scale using was calculated as 0.86 whereas, the internal reliability of respective dimensions varied from 0.64 to 0.69.

Social well-being scale: The short form of social well-being questionnaire developed by (Keyes, 1998) was used to measure social-well-being among the inpatients and normal control group. This scale contains 5 dimensions namely, social integration, social coherence, social acceptance, social contribution, and social integration. Participants responded to these questions using options ranging from strongly agree to strongly disagree. Negative items were reversely coded before the analysis. The reliability as reported by the author of the scale using was calculated as 0.84 whereas, the internal reliability of respective dimensions varied from 0.54 to 0.62.

Data analysis

Appropriate statistics like Walch's t-test, was used to analyse the data. Welch's t-test was used to examine the difference between the two groups.

Ethical consideration

Written informed consent was obtained from the patients after explaining the purpose and significance of the study. Patients have been assured of the confidentiality of the

information collected and that the data collected will be used for research purpose only.

RESULTS AND DISCUSSION

The purpose of the study was to examine the difference between BPD and normal control participants on perceived social support and social wellbeing. Table 1 and 2 highlights the significance of difference between the two groups on perceived social support and social wellbeing and their dimensions. The results revealed that a statistically significant difference was found between the two groups.

On 'family' dimension of perceived social support, the mean and SD scores of the BPD and normal control participants were found as 18.5 and 22.7 respectively. The difference is significant at .01 level of significance (t = -5.13). Further, Cohen's d effect size value (d = .77) suggests a medium effect size (Cohen, 1992).

The mean score of BPD inpatients on the first dimension of perceived social support- family was 18.59 (SD = 5.4), whereas the mean score of normal control group was 85.8 (SD = 4.3). A Welch's t-test showed that the difference was statistically significant (t = -5.13, p < 0.001, d = -.775).

On the 'friend' dimension of perceived social support. The results showed that the mean difference is significant between the two groups (t = -6.45, p < 0.001, d = -1.01).

Table 1: Showing Descriptive statistics (mean, median, standard deviation, & standard error) of the variables

	Group	N	Mean	Median	SD	SE
Family	BPD	80	18.59	19	5.4	0.60
	Normal	98	22.7	24	5.27	0.53
Friends	BPD	80	13.35	12	8.37	0.93
	Normal	98	20.4	20	5.67	0.57
Significant others	BPD	80	16.1	16.5	4.67	0.52
	Normal	98	21.4	22	5.67	0.57
Perceived Social support	BPD	80	48.04	46	12.63	1.41
	Normal	98	64.5	66	14.17	1.43
Social integration	BPD	80	9.13	9	3.63	0.40
	Normal	98	13.2	14	3.42	0.34
Social acceptance	BPD	80	9.31	10	3.4	0.38
	Normal	98	12.2	12	3.31	0.33
Social contribution	BPD	80	11.72	12.5	4.29	0.47
	Normal	98	12.8	13	3.83	0.38
Social actualization	BPD	80	8.96	9	3.65	0.40
	Normal	98	12.5	12	3.53	0.35
Social coherence	BPD	80	10.06	9.5	4.36	0.48
	Normal	98	11.1	11	2.61	0.26
Social wellbeing	BPD	80	49.19	50.5	13.14	1.46
	Normal	98	61.9	61	8.65	0.87

Table 2: Showing mean difference, df, t-value, standard error difference, and effect size between BPD inpatients and normal control group on studied variables.

		statistic	df	p	Mean difference	Cohen's d
Family	Welch's t	-5.13	167	< .001	-4.13	-0.775
Friends	Welch's t	-6.45	134	< .001	-7.08	-1.01
Significant others	Welch's t	-6.78	176	< .001	-5.26	-1.002
Per. Social support	Welch's t	-8.19	175	< .001	-16.46	-1.219
Social integration	Welch's t	-7.73	165	< .001	-4.12	-1.171
Social acceptance	Welch's t	-5.71	167	< .001	-2.89	-0.862
Social contribution	Welch's t	-1.74	160	0.084	-1.07	-0.265
Social actualization	Welch's t	-6.59	167	< .001	-3.57	-0.996
Social coherence	Welch's t	-1.88	123	0.063	-1.04	-0.297
Social wellbeing	Welch's t	-7.42	131	< .001	-12.69	-1.165

On the 'significant others', the third dimension of perceived social support, the results again showed that the mean difference is significant between the two groups (t = -6.78, p < 0.001, *d* = -1.00). When comparing these two groups on the overall score of perceived social support, it was again found that the difference is significant between the two groups (t = -8.19, p < 0.001, *d* = -1.21). Hence, it is clear from the above results that the perceived social support is significantly higher among the normal- control group as compared to the BPD inpatients. Perceived social support is how persons observe support from friends, family members, and others as source to provide material, psychological and overall support during the times of need. A significant literature is available on perceived social support. All studies report a positive impact of perceived social support on the wellbeing. These results can be supported by the findings of previous studies (Siedlecki et al., 2014; Uchino et al., 2012).

Significant difference between BPD inpatients with normal control participants on social integration, social acceptance, and social actualization - the dimensions of social wellbeing. The mean scores of BPD inpatients on social integration (t = -7.73, p < 0.001, *d* = -1.17), social acceptance (t = -5.71, p < 0.001, *d* = -0.86), and social actualization (t = -6.59, p < 0.001, *d* = -0.99) were found significantly lower as compared to the counterpart. When comparing these two groups on the overall score of social wellbeing, the mean score of BPD inpatients was found significantly lower as compared to the normal control participants (t = -7.42, p < 0.001, *d* = -1.16). In conclusion, it can be said that the normal control participants have higher level of perceived social support and better social wellbeing as compared to the BPD inpatients. These results are in line with the findings of (Uchino et al., 2012). They reported that having high level of perceived social support leads to better physical and mental health outcomes. These results can also be supported by (Eker & Arkar, 1995), who conducted a study to determine the psychometric properties of the MSPS scale in normal and pathological groups in developing country. They also revealed that perceived social support of pathological group was higher as compared to the normal group. Furthermore, they revealed that the psychometric properties of the scale were good.

CONCLUSION

This study has been designed to examine the significance of difference between BPD inpatients and normal control participants on perceived social support and social wellbeing. It was found that BPD inpatients scored lower on perceived social support and social wellbeing. It is noteworthy that understanding perceived social support is paramount in the backdrop of its significance in difficult situations or crises like stress, anxiety, depression, and other negative emotions. It is suggested that the friends and family members support to BPD inpatients should be encouraged because support plays a vital role for enhancing the wellbeing of these patients.

Conflicts of Interest: The authors declare no conflict of interest.

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Original Research Article

Post Traumatic Effects of COVID-19 on General Population

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ABSTRACT

This study sought to assess the extent of PTSD-like symptoms associated with the second wave of COVID 19 pandemic in India during summer 2021. For this a cross-sectional online survey with the quantitative approach was conducted to assess PTSD symptoms along with exploring participants' level of knowledge about COVID-19 and its psychosocial effects in the general population. A total of 264 participants from across the country completed the survey. Analysis revealed that 28.4% met the criteria for PTSD symptoms; these symptoms were observed (irrespective of getting infected with COVID or not) in both COVID positive and Non COVID groups in the same magnitude; and sense of threat was the PTSD symptom reported by the highest number of respondents. Around 67% of the participants were anxious about the new variant of COVID and media news of infection and deaths from COVID-19 induced fear, yet less people found it so uncomfortable to be detached from regular activities. Thus, understanding the psychosocial response induced by such a pandemic can help in adequate screening for mental health issues, planning effective interventions and resource allocation in the general population as well.

Keywords: *COVID 19, Psychosocial Effects, PTSD symptoms, COVID second wave*

INTRODUCTION

India along with most other countries in the world, had reeled under a brutal second wave of the pandemic started in mid-March -April till around June 2021. When cases rose rapidly, in many instances the whole family tested positive for corona virus; and even after losing their dear ones to COVID, were unable to grieve together due to safety constraints and social distancing norms. Loss of income, decrease in socialization opportunities, surge in information related to COVID, crises of global proportions with potentially life-threatening consequences along with fear of losing loved ones added to serve as a cruel reminder of the lockdown; hence exacerbating concerns of mental health conditions especially traumatic stress reactions. These experiences have renewed the debate of possibility of post-traumatic stress disorder (PTSD) symptoms during COVID pandemic including heightened arousal and intrusive re-experiencing. Initially most of the research studies focused on health care workers and their families or COVID patients with a history of severe infection, hospitalization or significant loss. Interestingly, a study reported that the vicarious traumatization scores of the general public were significantly higher than those of the front-line nurses [Li et al, 2020]. Mass trauma (otherwise known as a "collective trauma") takes place when the same event, or series of events, traumatizes a large number of people within some shared time span. Noting the effect of COVID 19 on mental health a top official of WHO said that “its mass trauma, which is beyond proportion, even bigger than what the world experienced after the Second World War and when there is mass trauma, it affects communities for many years to come” (Feuer W, 2021)).

A metanalysis (Zhang et. al, 2021) suggested prevalence of PTSD in the general population during the COVID- 19 pandemic was around 15% . Rapidly growing literature focusing on PTSD in the general population around the world (Singh and Khokhar, 2020; Hong Soyun et al, 2021) inadvertently drawn attention towards the need of verifying COVID-19 related first occurrence of PTSD in Indian population, as the spread of the virus and its management by local authorities differed markedly across regions of the world (Kar et al, 2021); and it is likely to influence peoples’ experience and prevalence estimates of PTSD. Despite being a developing country, Indian government had been putting enormous efforts by national regulations and stringent strategies to curb this crisis, still in most parts of the country the second wave of COVID has exponentially shaken individuals' physical and mental health. Mental health professionals speculated that the pandemic is going to impact on the mental health of the population globally with the increase in cases of depression, suicide, and self-harm, apart from other symptoms reported globally due to COVID 19 (Li et al., 2020; Moukaddam & Shah, 2020; Yao et al., 2020).

According to APA (American Psychological Association) Trauma is an emotional response to a terrible event like an accident, rape, natural disaster, etc. Further, trauma can be defined as a psychological and emotional response to an event or an experience that is deeply distressing or disturbing and has a long-lasting effect on an individual. According to International Classification of Diseases, 11th Revision (ICD-11) post-traumatic stress disorder (PTSD) is a psychiatric syndrome that develops by exposure to an extremely threatening or horrific event or series of events. Although exposure to the pandemic does not fit neatly within prevailing post-traumatic stress disorder criteria, but as in DSM-5 PTSD has been further described with a refined and expanded definition, which specifies that a person must directly experience (Criterion A1) or witness a

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traumatic event (A2) including exposure to others' traumatic experiences (A4: termed "vicarious trauma"). In context of second wave of COVID 19 even in the absence of Criterion A of PTSD (i.e., actual or threatened death, injury or sexual violation occurred in the past), it was more related to the repeated or extreme exposure to aversive details of the traumatic event (e.g., cry for hospital beds or oxygen through massages, social media, via media coverage) or future/anticipated stressful event (e.g., unemployment, isolation, sudden infection/death). Vicarious trauma, also known as secondary trauma, was introduced for People in the helping profession such as counselors and therapists, rescue workers who can have indirect exposure to a traumatic event through first-hand account or narrative of that event. This is the first time that DSM criteria have included deleterious effects of repeatedly witnessing or hearing stories regarding the others traumatic experiences. Although DSM-5 specifically excludes repeated or extreme exposure to aversive details of the event through electronic media, yet it may be considered as an example of vicarious trauma during second wave of COVID in general.

As COVID-19 turned out to be a most significant crisis of 21st century so far, it is evident that it has had traumatic effects on people in general. There is a need to study peoples' reactions to undeniable distress during COVID-19 pandemic and possibility of traumatic stress. This may further help essentially in ensuring targeted prevention and treatment interventions, and also in optimal utilization of mental health resources.

The present study was aimed to understand the distress associated with the effects of COVID 19 and its psychosocial effects in general population; and, to estimate the occurrence of Post-traumatic Stress symptoms among those who themselves got infected or those who witnessed or cared a close family member suffering with COVID 19 infection.

The study was planned as an exploratory cross-sectional research based on online survey of general population with the objectives: 1) To explore the psychosocial effects of COVID 19 2) To study the presence of Post-Traumatic Stress Disorder (PTSD) symptoms among participants; and 3) To study whether personal experience of participants with COVID 19 has a significant relationship with occurrence of PTSD symptoms among them.

METHOD

Participants and Procedure

This is a cross-sectional online survey with the quantitative approach, conducted among adults (>18 years) of both gender from across the country, using convenience and snowball sampling. For this purpose, a questionnaire containing questions on socio-demographic details and clinical status was administered. General Health Questionnaire (GHQ-9) was administered for screening and International Trauma questionnaire (ITQ) was administered to assess the presence of trauma and post-traumatic symptoms. All these questionnaires were converted into Google Forms and were administered online for data collection. The study background and objectives were briefly described at the beginning of this form, and it was ensured that Participants gave their consent before proceeding to answer the self-reported questionnaires. A link to this online questionnaire was sent out by what's app considering it has become the most often and extensively utilized social media platform specially to stay connected during lockdown period. Data were collected between June to August 2021, with ethical considerations of maintaining the confidentiality.

Online method made it possible to collect data from across the country and 264 participants were finally included for analysis which represented Pan India from more than 50 cities. Certain methodological consideration was also taken into account to assign it as first occurrence of PTSD due to COVID pandemic. There are findings indicating about 80% of individuals with PTSD reported to have at least one other co morbid disorder, in particular: depressive and anxiety disorders, as well as substance use disorder (Galatzer-Levy et al, 2013; Rytwinski et al, 2013). Keeping this in mind those with the history of previous Psychiatric illness and GHQ score >2 was excluded from the sample. Also, in consonance with PTSD criteria, duration of reported symptoms should be at least for a month at the time of filling of form. Information regarding previous life events or presence of significant stress was also elicited so as not to conflate pre-existing conditions with ongoing distress.

Tools

Sociodemographic Data Sheet: A semi structured proforma was specifically designed for this study to collect information about socio-demographic variables of the participants including information regarding their knowledge about COVID and health behavior. History regarding participants' previous mental health and stressors were also sought.

General Health Questionnaire-5 (GHQ-5; Shamsunder et al. 1986): It is the shortest standardized version of the General Health Questionnaire. Each item is scored as either zero or one. It has been used as a screening tool and only those persons having score of less than 2 were included in the study.

The International Trauma Questionnaire (ITQ; by Cloitre et al. 2018): ITQ is a brief, simply worded measure which first screens for a respondent's 'index' trauma event and participants are instructed to answer all questions in relation to that event. For this study COVID was taken as index event to explore the core features of PTSD and CPTSD thus increasing its applicability. This tool straightforward employs diagnostic rules consistent with the ICD-11, as set forth by the World Health Organization and is easily available on public domain. The diagnosis of PTSD was refined to include symptoms organized into three clusters: re-experiencing of the traumatic event in the here and now, avoidance of traumatic reminders, and a sense of current threat along with introducing CPTSD to describe three clusters related to disturbances in self-organization (DSO). Participants are expected to answer all ITQ items on a 5-point Likert scale ranging from 0 *(*Not at all*) to 4 (*Extremely*).* Thus, PTSD and DSO symptom scores range from 0 to 24 (i.e., the sum of the six items from each

subscale), and CPTSD symptom scores range from 0 to 48 (i.e., the sum of the 12 ITQ items). To meet the requirements for probable PTSD diagnosis, a person has tobe trauma exposed; at least one symptom should be present from each PTSD cluster, and there has to be functional impairment associated with these symptoms. For diagnostic purposes, each symptom and functional impairment indicator was considered 'present' based on a score of ≥ 2 (*Moderately*) on the Likert scale (Cloitre et al., 2018).The diagnostic requirements for CPTSD are met if the PTSD criteria are satisfied, *and* at least one symptom is present from each DSO cluster, and there is functional impairment associated with these symptoms. Psychometric properties of this test produced scores with satisfactory internal consistency, as measured by Cronbach's alpha (α), across a range of study samples including epidemiological (Ben-Ezra et al., 2018; Cloitre et al., 2019) and community sample (Ho et al., 2020).

The relevant descriptive statistics were used for all variables along with inferential statistics like Chi-square to find group difference wherever applicable.

RESULTS

Table 1 summarizes the details of demographic and clinical characteristics of the sample. The sample had a mean age of 43.09 (+_13.17) in the range of 18-74 years. Total 156 (59.1%) men and 108 (40.9%) women had completed this survey. In terms of education, 115 (43.56%) had completed their graduation and 129 (48.86%) were Post graduate, mostly having some professional degree, only 11 of them held a higher secondary school degree, and 9 had studied up to high school or below. Most of the participants 151(57.2%) were full or part time employed at the time of this study, while 27(10.2 %) claimed to be self-employed, 30 (11.4 %) were student and 28(10.6 %) were homemakers and others (retired, unemployed etc.) respectively. Highest no. of sample (92) had 4 members in the family while for 80 participants it comprised of 2-3 members. In terms of family income, maximum number of participants (125, 47.3%) had an annual family income between 15-25 lakhs, while 74 (28%) belonged to the family with annual income of 5 -15 lakhs and 39 (14.8%) to 25 lakhs and above; only 26 (9.8%) participants had a family income of less than 5 lakhs per annum.

Further Clinical Characteristics of the participants as shown in Table- 1 indicate that 133 (50.6%) participants got their COVID test done in last one year and 99 (37.5%) out of total sample were tested positive. Out of those tested positive, only 21(20.2%) got this infection in 2020 while most of them (64, 61.5%) had this infection within a month prior to the survey, during the second wave of COVID in India in 2021. 127 respondents also had their family members tested positive with Covid infection, yet among all these only 10 needed hospitalizations for recovery.

Psychosocial factors experienced by the participants, related to Covid experiences have been listed in the Table-2. Out of total sample 184 participants experienced anxiety about the Covid infection, mainly apprehension regarding some new variant of the virus. Along with the major stress of Covid, participants have also reported some past stressful

Table 1: Demographic and Clinical characteristics of the Sample

Variables	**M, SD or n &Percentage (N=264)**	
Age	M=43.09 (SD=13.17)	Range17yrs-74 yrs
Gender	Male: 156 (59.1%)	Female: 108 (40.9%)
Education	Up to 10th: 12th: Graduation: Postgraduation & above:	9 (3.40%) 11 (4.16%) 115 (43.56%) 129 (48.86%)
Occupation	Employed: Self- Employed: Students: Homemakers: Others:	151 (57.2%) 27 (10.2%) 30 (11.4%) 28 (10.6%) 28 (10.6%)
Family Income	Less than 5 lakhs 5-15 lakhs: 15-25 lakhs: More than 25 lakh	26 (09.8%) 74(28.0%) 125(47.3) 39(14.8%)
Number of Family Members	02 4 5 6 7 and above	80 (30.30%) 92 (34.84%) 44 (16.66) 19 (7.19) 29 (10.98)
COVID test done in last year	Yes No	133 (50.6) 131 (49.4)
Got Covid Infection **If Yes, When?**	Yes No In 2020 Around 6 months back Around One mont back Very recently	99 (37.5%) 165 (62.5%) 21 (20.2%) 15 (14.5%) 64 (61.5%) 4 (3.8)
Any Family Member got infected with Covid	Yes No	127(49.2%) 137 (50.8%)
Hospital Admission required (For Self or Family)	Yes No	10 (4.9%) 254 (95.1)

Table-2 Psychosocial factors and COVID-19

Factors		**(n & Percentage %) (N=264)**
Experienced Anxiety about symptoms of COVID/ New variant of Covid	Yes	184 69.7%)
	No	80 (30.3%)
Vaccination done	Yes	207 (78.4%)
	No	57 (21.6 %)
Type of other stressful experiences	Loss of someone close	30 (11.4%)
	Work and financial problems	64 (31.2%)
	Family problems /Sickness or disability	86 (32.6%)
	Violent event (assault or accident)	15 (09.1%)
	Others	22 (08.3%)
	Nothing significant	58 (06.8%)
Disturbed biological function (Sleep, appetite)	Not at all	75 (28.4%)
	A little bit	84 (31.8%)
	Moderate	31(11.7%)
	Quite a bit	26 (09.8%)
	Extremely	48 (18.2%)
Subjective report of distress due to COVID	Yes	166 (62.9%)
	No	98 (37.1%)
Other Covid related Stressors (More than one or two may be Present)	Media news of infection and deaths from COVID-19	212 (80.3%)
	Stress due to change in/ lack of regular activities	125 (47.3%)
	Worries over the number of increasing deaths due to poor health care facilities	184 (69.7%)
	Whether the government can deal with and manage this outbreak	148 (56.1%)
	Waiting for COVID-19 Vaccine	92 (34.8%)
Met Criteria for PTSD symptoms	0	16 (6.1)
	1	42(15.9)
	2	67 (25.4)
	3	64 (24.2)
	4	75 (28.4)

Table 3: PTSD symptoms in the Sample

Variable	**No.&% of cases met the criteria of PTSD**	
	Yes	**No**
Re experiencing	165(62.5)	99(37.5)
Avoidance	142(53.8)	122(46.2)
Sense of current threat	228(86.4)	36(13.6)
Functional impairment	133(50.4)	131 (49.6)
PTSD	75(28.4)	189(71.6)
Affective Deregulation	138(52.3)	126(47.7)
Negative self-concept	63 (23.9)	201(76.1)
Disturbances in relationship	70 (26.5)	194(73.5)
Functional impairment	101(38.3)	163(61.7)
CPTSD (among those who met PTSD criteria	28(37%)	

experiences, which also might be affecting their mental health negatively. These were stated mainly in the form of family problems, problems related to work and finance, and a significant number also reported the stress related to loss of someone close to him/her, followed by violent event and others, yet less people found it so uncomfortable to be detached from regular activities. Data regarding any change in biological functioning was also collected which is also reported in Table- 2. 166 respondents out of 264 reported subjective distress due to COVID pandemic. Maximum number of respondents have reported stress related to media news related to increasing number of infection and deaths, followed by worries regarding perceived poor health care facilities, due to over burden on health care systems. However more than 50% of the participants have shown trust that the government agencies would be able to manage the disastrous condition.

When assessed for probable PTSD symptoms, among all the respondents 28.6% met all the four criteria of PTSD (as depicted in Table- 3); while 6.1% respondent denied having any of the symptoms of PTSD. Rest of them met one, two or three criteria of PTSD. Sense of current threat was the symptom reported by highest number of respondents (86.4%), followed by re-experiencing, avoidance, and functional impairment. Surprisingly among those who met PTSD criteria (total 75), around 37% also reported Complex PTSD symptoms. As depicted in Table 4, when group of participants who experienced COVID infection were compared with those who didn't have COVID infection, for

Table 4: PTSD symptoms in the COVID positive and Non COVID groups

Variable	Those who had COVID (N=99)		Those who didn't have COVID(N=165)		χ^2	P value
	No. & Percentage of cases met the criteria of PTSD		No.and Percentage of cases met the criteria of PTSD			
	Yes	No	Yes	No		
Re-experiencing	61(61.6)	38(38.4)	104(63)	61(37)	0.053	0.818
Avoidance	47(47.5)	52(52.5)	95(57.6)	70 (42.4)	2.54	0.111
Sense of current threat	85(85.9)	14 (14.1)	143 (86.7)	22 (13.3)	0.034	0.853
Functional impairment	52(52.5)	47(47.5)	81(49.1)	84 (50.9)	0.292	0.589
PTSD	28(28.3)	71(71.7)	47(28.5)	118 (71.5)	0.001	0.972
Affective dysregulation	46(46.5)	53(53.5)	92 (55.8)	73 (44.2)	2.142	0.143
Negativeself concept	19(19.2)	80(80.8)	44(26.7)	121 (73.3)	1.9	0.168
Disturbances in relationship	25(25.3)	74 (74.7)	45(27.3)	120 (72.7)	0.13	0.719
Functional impairment	43(43.4)	56(56.6)	58(35.2)	107 (64.8)	1.79	0.18
CPTSD (among those who met PTSD criteria	7(87.5)		21(91.3)		0.098	0.754
Subjective report of distress due to COVID	63(63.3)	37(36.7)	103(62.8)	61(37.2)	0.006	0.94

the symptoms of PTSD, there was no significant difference observed on PTSD cluster or functional impairment associated with these symptoms. Moreover, almost similar number of the participants in both the groups (62-63%) reported subjective distress due to COVID related anxiety.

DISCUSSION

Similar to other disasters, in the context of potentially life-threatening consequences of COVID-19, it is important to understand the mental health sequalae of this pandemic specially during the second wave in India when general population felt threatened and many of them may have experienced high levels of fear of imminent death for self and others. There was also a heightened anxiety regarding availability of medical care and support, which might have created a traumatic effect. Moreover, it became challenging when people were already in the process of adapting to lifestyle changes in effort to managing the fear of contracting the virus. PTSD is a serious psychological disorder that can develop in persons exposed not only to actual or threatened death or those directly experienced the traumatic event(s) but also when there is repeated or extreme exposure to aversive details of the event (vicarious trauma).

A review by Husky at el, 2021 revealed that majority of studies on prevalence of PTSD have used convenience samples with a large proportion of women and generally young adults, which raised the question of the representativeness of the samples and their relevance with regard to establishing the prevalence/ estimation of COVID-19-related PTSD in the general population. In present study convenience snowball sampling made it possible to receive sufficient number of highly motivated respondents representing vast age group (18-74), gender (male: female= 60:40), and different backgrounds (family, occupation). Also, it was observed that most of the studies were initiated at the early stages of COVID outbreak in their respective regions without clarifying specific COVID-19-related event questions for estimating prevalence of PTSD. This cross-sectional survey was conducted at the later stage of surge in cases during second wave of COVID with due considerations of assessing lifetime mental disorders and secondary stressors if any that occurred during the pandemic to clearly attribute the cause of stated distress and trauma to the ongoing pandemic only to limit the risk of wrong estimation. Tool for assessing trauma was selected and followed cautiously as it specified the cutoff for each symptom mentioned in diagnostic criteria thus skipping the notable heterogeneity of symptoms and cutoff score in reported studies (Husky et al. 2021). ITQ was designed specifically for assessing how a respondent typically feels, thinks about oneself, and relates to others in context of trauma event mentioned by them. These items are answered in respect to PTSD and DSO symptoms accompanied by three items measuring associated functional impairments in the domains of social, occupation, and other important areas of life. The findings of the present study also highlight possible positive relation between the pandemic and PTSD symptoms. This is the high time when mental health professionals should urgently pay attention to the need of

screening and preventive measures for the general population who are significantly exposed to COVID-19, and to develop different psychological intervention strategies for them.

Recommended safety measures such as self-isolation and quarantine have affected usual activities, routines, and livelihoods of people that have led to an increase in loneliness, anxiety, depression, insomnia, harmful alcohol and drug use, and self-harm or suicidal behaviour (World Health Organization, 2020). Some of the major causes of mental health issues during COVID-19 pandemic include fear of falling ill and dying, avoiding health care due to fear of being infected, fear of losing work and livelihoods while in care, fear of being socially excluded, fear of being placed in quarantine, fear of being separated from loved ones and caregivers, refusal to care for vulnerable individuals due to fear of infection, feelings of helplessness, boredom, loneliness, and depression due to being isolated, fear of re-living the experience of a previous pandemic (Brooks et al., 2020). The similar findings of the present study, thus, are in support of these previous findings.

Initially possible response and mental health status of dealing with unexpected health scenario like COVID has drawn researchers' attention specifically for health care professionals, survivors of severe COVID infections in ICUS or their family (Holmes, 2021; Søvold et al, 2021; Johannes et al, 2021). In consonance with these reports, it was evident that around one fourth of the participants from general population studied in this survey have experienced PTSD like symptoms. Undoubtedly, experience of living amid the first global mass trauma event of such severity in one's lifetime and particularly when possibility of several waves of this pandemic forced everyone to remain alert in prospect of catching a deadly invisible disease is obviously and intrinsically frightening for population in general as well. It was evident in the present sample that both, who have directly encountered COVID symptoms and who were not infected reported same amount of PTSD symptoms. Moreover, Sense of current threat was the symptom reported by highest number of respondents in both the groups followed by re-experiencing. Thus, along with the intensity of an event how that person has processed that incidence and assigned a meaning in terms of their life also define trauma. Therefore, a sense of uncontrollability, concerns about becoming seriously ill and dying for self, loved ones and friends after contracting COVID-19 as well as the grief associated with real or observed losses can be listed as some of the reasons to explain traumatic response of people. Other symptoms such as avoidance or functional impairment were also reported by both groups to the same extent. It's possible that some common issues like prolonged social isolation from family and friends, loss of employment and profound economic consequences, disruption of regular routines, and exposure to horrific COVID related news were commonly experienced by everyone. In an integrative review of literature, Soyun Hong (2021) identified social discrimination, fear of uncontrolled contagion and financial burden or economic instability as risk factors to impact of COVID 19 on general population while protective factors included social support and timely government action. Although we have not quantitatively analyzed data for association among other factors most participants admitted media news of infection and death from COVID, and scarcity of health resources increased their stress, but not to the extent of affecting daily functioning or not trusting governments efforts.

The present study was an attempt to identify the traumatic effects of Pandemic, especially after the second wave of 2021, and the presence of Post-traumatic Stress symptoms among general population.

LIMITATIONS & IMPLICATIONS

After almost a century world has witnessed a pandemic which had engulfed the population globally and had left significant and long-lasting scars not only on physical health of people, but also on psychological, social, emotional, and financial wellbeing. Similarly forced isolation, quarantine, and lockdown to contain the spread of the COVID-19 has led to restricting social interactions and support and a sudden rise in mental health issue among people of all strata around the world. Though the sample size taken for the study was not small, still this limited number of participants is not sufficient to draw inferences regarding prevalence of PTSD in general population after COVID Pandemic. Also, the online method of data collection limits the opportunity of conducting observation and interview to understand and draw inferences about the subjective distress and its psychosocial impact on various domains of participants' lives.

However, the authors have incorporated the changing definitions of trauma over time for the present study, which leads to implications of such changes on counseling practice and areas of needed growth and research. Also, the present study may be an effort to draw attention of health professionals, especially of mental health professionals to make a conscious effort to identify the symptoms of COVID related trauma in general population at large, and to plan interventions to deal with it, so longer and serious effects of these symptoms can be prevented.

Conflicts of Interest: The authors declare no conflict of interest.

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Original Research Article

Development and validation of Geriatric Clinical Depression Rating Scale

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ABSTRACT

Aim &Objective: The aim of the study was to develop and standardize a clinically useful depression rating scale for the elderly. In diagnosing and leveling depression in the elderly, traditional rating scales offer limited use in clinical settings as they cannot provide the specific level of severity on the Likert scale, and also miss some common symptoms that are part of depression in the elderly; thereby putting constraints on adequate quantification of depressive symptoms and severity. A lengthy list of items proves time-consuming and tiring to the elderly. The current scale aims to overcome these shortcomings and to provide symptoms and severity for clinical use to make treatment decisions and diagnosis accurate.

Method: Based on a systematic review of literature, evaluation of popular depression rating scales, and discussion with experts, a list of items was generated on a Likert scale. Phase I-III of scale development, the items framed were evaluated for content and face validity, internal consistency, concurrent validity, and clinical cut-offs were established. The scale items were evaluated on two sample groups- one, from community-dwelling elderly persons *(n=36)* and another on the clinical sample *(n=36)* on patients visiting a geriatric mental health clinic in the out-patient department of tertiary care hospital.

Results: Cronbach's alpha of the final 20-items of the scale for the clinical and non-clinical sample was .88 and .90, respectively. Concurrent validity as established with routinely used rating scale was .82 for the clinical sample and .96 for the non-clinical sample; both were significant at α0.01. The receiver operating characteristic curve was plotted for the clinical sample and area under the curve was 0.77, and the optimum cut point was identified as a score of 25.

Conclusion: Geriatric clinical depression rating scale (GCDRS) 20 item instrument with a cut-off of 25, validated on clinical as well as community elderly with high sensitivity and specificity in assessing the depressive symptoms domains on Likert scale and recommended to be used by the clinician for severity and diagnosis of depression among elderly.

Keywords: Depression, Geriatric, Likert Scale, Clinical Rating, Diagnosis, GCDRS

INTRODUCTION

Depression accounts to be the greatest burden among the elderly (Grover & Malhotra, 2015) and community-based mental health studies have found that based on cultural variations, the point prevalence of depressive disorders in the elderly around the world varies from 10% to 20% (Barua et al., 2011).In India, a recent meta-analysis of 56 community-based studies found the pooled prevalence of depression among the elderly to be as high as 34.4% (Pilania et al., 2019).

Depression in the elderly differs from that in younger adults in terms of presentation, aetiology, risk and protective factors, and prognosis; all of which are significantly influenced by the person's position in the life stage. Older adults are less likely to endorse cognitive-affective symptoms of depression, including dysphoria and worthlessness/ guilt, than are younger adults (Gallo et al., 1994). Sleep disturbance, fatigue, psychomotor retardation, loss of interest in living, and hopelessness about the future may be more prevalent in late-life depression than in depression in younger or middle-aged adults (Christensen et al., 1999). Subjective complaints of poor memory and concentration are also common among depressed older adults. Slower cognitive processing speed and executive dysfunction are frequent findings from objective testing among elderly (Butters et al., 2004). But population-specific features of the elderly might sometimes make diagnosis and treatment of depression a challenge, the most important of which has been the fact that elderly people have difficulty in expressing their depressive moods. Depressive moods, loss of interest, and anhedonia can be seen as a feature of aging and are therefore not expressed as a complaint (Sözeri-Varma, 2012). Thus, accurate assessment becomes difficult because many fail to report symptoms despite having them in manners of classic presentation. Discussing the state of mental health of the elderly in the light of social structures, Prakash et al. (2009) talk about the prevailing socially sanctioned roles for the elderly in India, whereby most of the time symptoms of illness are disregarded as part of the "normal aging process" or something "not serious".

Literature from hospital clinics, community, as well as old age homes, found depression as the most common psychiatric disorder in the geriatric population with prevalence ranging from 22.2 % to 55.2 % of geropsychiatric patients (Prakash& Kukreti, 2013). However, the diagnosis is often missed, mostly in the elderly with physical illness. This was adequately depicted

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in a study (Prakash et al., 2009) whereby 23% of patients having depressive symptoms and 18% having a definite depressive disorder among geriatric clinic attendees were missed a diagnosis of depression by geriatric physicians in a tertiary clinic. Obstacles to adequate diagnosis and treatment include doctors' reluctance to discuss emotional problems, time constraints, and medical comorbidities that complicate diagnosis and compete for clinical attention(Alexopoulos, 2005). Additionally, perceived stigma creates reluctance inpatients to seek treatment, and challenges of physical limitations, cognitive impairment, and complex medication regimes lead to undermining treatment adherence.

Given the challenge of accurate diagnosis of depression elderly, various tools of assessment has overtime been developed and used- some specific to elderly such as Geriatric Depression Scale-30 (GDS) (Yesavage et al., 1982), Geriatric Depression Scale-15 (Sheikh &Yesavage, 1986)while others are primarily established for the adult population in general, such as Hamilton Rating Scale for Depression (HAM-D) (Hamilton, 1960); Zung Self-Rating Scale Depression (ZSRSD) (Zung, 1965); Beck Depression Inventory (BDI) (Beck et al., 1961); Montgomery-Asberg Depression Rating Scale (MDRS) (Montgomery &Asberg, 1979). Though most of the tools established for the general adult population have strong psychometric foundations; they have not been validated for the assessment of depression in the geriatric population. The GDS-30 (Yesavage et al., 1982) and GDS-15 (Sheikh &Yesavage, 1986) have by far been documented as the most valid instrument in various geriatric populations (Holroyd & Clayton, 2000), it can be noted that its dichotomous scoring (1 or 0) fails to adequately quantify symptomatology whereby there exists room for symptoms to present themselves in amounts the elderly people may fail to categorize in 'yes' or 'no' format. The inclusion of reverse scoring items complicates the time-efficient administration of the tool in clinical set-ups where patient load is higher than available clinician resources.

The GDS-30 (Yesavage et al., 1982), translated to Hindi as Geriatric Depression Scale-Hindi (GDS-H) and validated on a rural population in India by Ganguli et al. (1999) is one of the commonly used assessment tools in the current clinical context and it shows high internal consistency and a factor structure comparable to the original English language version; (Grover & Malhotra, 2015) but limitations remain the same.

To overcome the limitations of the aforementioned scales, a new tool named Geriatric Clinical Depression Rating Scale (GCDRS) was designed to specifically be used with the elderly population in clinical setups. Keeping in view time constraints of public clinical setups, and to enhance clinical utilization, the instrument was kept brief (20 items). To maximize quantification of symptoms, a Likert Scale format ranging from 0 to 4 was added, whereby 0= Never, 1= Rarely, 2= Sometimes, 3= Often, and 4= Always. The tool was designed to measure common symptoms of depression and to establish its severity.

METHODS

I. Item generation

Several instruments (Beck et al., 1961; Hamilton, 1960; Montgomery & Asberg, 1979; Sheikh & Yesavage, 1986; Yesavage et al., 1982; Zung, 1965) designed to measure depression were examined, and literature(Butters et al., 2004; Christensen et al., 1999; Gallo et al., 1994; Sözeri-Varma, 2012) addressing the symptomatological presentation of depression in older adults was thoroughly studied. Based on them, the discussion was carried out with a team of professionals working in Geriatric Mental Health Clinic under the department of psychiatry of a tertiary care hospital in north India. An initial list of 34 items was generated. These items were then reviewed for appropriateness, repetitiveness, language, ease of understanding, and redundancies, following which 26 items were retained. Next, the content and face validity of the items were analyzed and 20 items were retained and 6 items were excluded. These items covered the 4 symptoms domains i.e. mood symptoms (7 items), cognitive symptoms (7 items), psychosomatic symptoms (4 items), and autonomic symptoms (2 items).

II. Item selection

To establish item-total correlation, data was collected from a group of community-dwelling elderly who were approached at random in public spaces such as parks, open-air gyms, community clubs, etc., within the city of Chandigarh. The nature of the study was explained to them, and if they gave informed written consent, the scale was administered. A total of 36 participants took part in the study, aged between 60 to 90 years of age (*Mean/SD=65.83/6.80*), of which 63.9% (n=23) were male and 36.1% (n=13) were female.

The Cronbach's alpha coefficient for the 20 items was found to be .90. Every item was then correlated with the total test score to identify items that correlated most with the test total. The sample had a mean score of 17.08 (*SD=12.39*). Item total correlation of individual items ranged from .33 to .76, with most above .50 (Table 1).

III. Clinical testing and validation

The 20-item GCDRS was further tested on 36 elderly patients visiting the Geriatric Mental Health Clinic, of a territory care hospital for consultation. The age of the participants ranged from 60 to 88 years (*Mean=69.11, SD=7.13)*, of which 63.9% (n=23) were male and 36.1% (n=13) were female.

To establish concurrent validity of the items, the score of these participants on the routinely administered GDS was correlated with GCDRS. The correlation coefficient was calculated to be *r*=.82, significant at *α0.01*, thereby establishing strong concurrent validity. The participants' mean score on the dichotomously scored 30-item GDS was 15.13 (*SD=8.26*) and on GCDRS was 32.30 (*SD=14.98*). The GDS when administered to the community-dwelling elderly population, mean score of 8.63 (*SD=6.50*) was obtained. The scores when correlated with[u1] GCDRS gave a correlation coefficient of *r=.96,*

significant at *α0.01.*

Table 1: Item Total Statistics for clinical sample

Item no.	Statements Responses are on Likert scale: Never=0, Rarely=1, Sometimes=2, Often=3, Always=4	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1.	Do you feel sad?	29.9444	199.083	.621	.874
2.	Do you get irritable /angry easily over minor things?	30.3889	207.444	.408	.881
3.	Do you feel worried or dizzy?	30.4722	202.828	.556	.876
4.	Do you feel lonely and bored?	30.5278	197.228	.741	.871
5.	Do you feel a lack of desire to meet or interact with others?	30.7500	210.307	.278	.886
6.	Do you feel like crying?	31.1389	203.952	.476	.879
7.	Does death or suicidal thoughts come to your mind?	31.5833	203.964	.630	.875
8.	Do you forget things easily?	30.6944	209.475	.386	.881
9.	Do you feel difficulty in concentrating on any task?	30.7778	200.863	.626	.874
10.	Do you feel difficulty in taking decisions?	30.9444	196.740	.686	.872
11.	Do you feel helpless?	30.8056	195.133	.768	.869
12.	Do you feel hopeless?	30.6944	193.990	.776	.869
13.	Do you feel you are not worth living?	31.4167	199.736	.607	.874
14.	Do you feel dissatisfied with life?	30.9167	205.107	.447	.880
15.	Do you feel headaches and body aches?	30.4167	217.221	.146	.889
16.	Do you feel constipated?	30.7778	218.349	.111	.890
17.	Do you feel you are not so active now?	30.1389	201.266	.520	.877
18.	Do you feel fatigued?	30.4722	199.571	.555	.876
19.	Do you feel difficulty in getting sleep?	30.0278	207.799	.321	.885
20.	Do you feel a lack of desire to eat?	30.9167	210.193	.349	.882

To further the reliability of test items, internal consistency for scores of patient sample was calculated, giving a Cronbach alpha of .88. With a mean score of 32.30 (*SD=14.98*), the majority of the items had an item-total correlation above .50.

IV. Establishing clinical cut-off

Out of 36 patients in the clinical trial group, *n=26* were diagnosed with depression in a detailed clinical interview by the treating clinician. Larger values of the test score indicated stronger evidence for a positive actual state. The mean score for patients diagnosed with depression as per DSM-5 criteria (n=26) was 36.11 (*SD=13.84*), and for those not diagnosed with depression (n=10), the mean score was calculated to be 22.4 (*SD=13.80*).

In situations where test responses are recorded on a range of threshold values, sensitivity and specificity vary across the different thresholds, and sensitivity is inversely related with specificity. The plot of sensitivity versus 1-Specificity is called receiver operating characteristic (ROC) curve and the area under the curve (AUC) is an efficacious measure of accuracy(Hajian-Tilaki, 2013). The ROC curve helps to examine the diagnostic accuracy of a test in terms of discriminating the true state of subjects and finding optimal cut-off values (Hajian-Tilaki, 2013).

The area under the curve for the ROC was .77 (95% CI 0.59-0.95) (Table 2 & Figure 1), and the optimum cut point was 25 for identification of depression with a sensitivity of 76.9% and a 1-Specificity rate of 30% (Table 3).Further, to verify the cutoff of the 25 score on GCDRS, authors follow up some cases of depression for next two visits. Those who were not having significant scores on geriatric depression rating scale but were having above than 25 cut-off scores on GCDRS, those patients were diagnosed positive for depression in next two visits within four weeks. These were very interesting results as the GCDRS was able to pick up those cases early that were having depression but not found significant depression on traditional depression rating scale for elderly.

Table 2: Area Under the Curve

Test Result Variable(s): GCDRS total test score				
Area	Std. Error	Asymptotic Sig. [b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.77	.09	.01	.59	.95
a. Under the nonparametric assumption				
b. Null hypothesis: true area = 0.5				

Table 3: Coordinates of the ROC- Test Result Variable(s): GCDRS total test score

Positive if Greater Than or Equal To	Sensitivity	1 – Specificity
3.0000	1.000	1.000
10.0000	.962	.800
17.0000	.962	.600
18.5000	.962	.500
20.0000	.923	.500
22.0000	.885	.500
23.5000	.808	.400
24.5000	.769	.400
25.5000	**.769**	**.300**
28.5000	.654	.300
33.0000	.577	.300
35.5000	.577	.200
36.5000	.538	.200
39.5000	.385	.100
43.5000	.308	.100
45.5000	.231	.100
46.5000	.231	.000
48.0000	.192	.000
53.0000	.154	.000
57.5000	.115	.000
59.0000	.000	.000

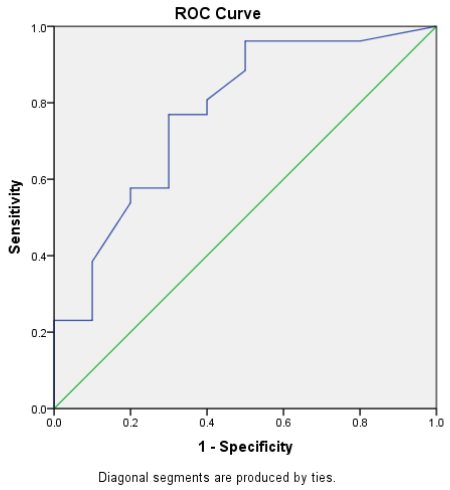

Figure 1: Receiver Operating Curve for GCDRS

RESULTS

Cronbach's alpha of the final 20-items of the scale for the clinical and non-clinical sample was .88 and .90 respectively. Concurrent validity as established with routinely used rating scale was .82 for the clinical sample and .96 for the non-clinical sample, both were significant at α0.01. The receiver operating characteristic curve was plotted for the clinical sample and area under the curve was 0.77, and the optimum cut point was identified score of 25.

CONCLUSION

The GCDRS holds the potential to be the new 20-item clinician-administered tool to assess depression in the elderly across medical domains. It allows room for time-efficient administration while also ensuring accurate quantification of symptoms in clinical settings.The scale also holds potential to early identify the presence of depression in elderly as compare to traditional depression rating scales. This scale has an advantage being on Likert scale and covering the four important symptoms domains such as mood, cognitive, psychosomatic and autonomic symptoms of depressive illness specifically present in elderly population. However, for establishing the severity levels, further studies are required on larger population and for internal consistency of the scale study needs to be

replicated on geriatric population. No additional training for administration is required as it is easy to be used by the clinicians and mental health experts.

Conflicts of Interest: The authors declare no conflict of interest.

Author Contributions: MK and KP conceived the study. KP collected the data; KP and MK analyzed and prepared the first draft of the manuscript. All authors reviewed and edited the manuscript

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Original Research Article

Depression, Anxiety, and Stress in Internet Gaming Addicts

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ABSTRACT

Over the years there has been growing concern about the excessive use of internet games and their impact on individuals. With the development of new technology, conventional gameplay mode has been replaced with digital gaming. Excessive use of gaming has been linked to various mental health problems. Determining mental health problems might be useful for identifying those at risk, preventing the development of gaming addiction, and understanding the intervention. The present study aims to examine the psychopathology of non-gamers, normal gamers, risky gamers, and addicts. A cross-sectional study was conducted on 120 college students (male & female), between 18 and 35 years. They were assessed using the internet gaming disorder scale and depression, anxiety, and stress scale-21. The study participants were students of various departments of SGT University, Haryana, India. The result showed that on post hoc analysis it was found that in the domains of depression and anxiety, addicts were having significantly ($p<0.05$) higher scores than normal gamers. Also, in the domain of stress, addicts were having significantly ($p<0.01$) higher scores than normal gamers. Furthermore, addicts spent more time playing games on weekdays and weekends as compared to risky and normal gamers.

Keywords: *Internet Gaming disorder, Depression, Pub G, Online Games, Stress, Anxiety*

INTRODUCTION

Over the past few years, playing video games online has gained popularity as a form of recreation and as a source of entertainment. With the development of new technology, conventional gameplay mode has been replaced with digital gaming (Mannikko et al., 2015; Ballabio et al., 2017). The majority of individuals use games as a source of entertainment or leisure activity in a healthy way. Some may experience occasional distress but do not develop gaming-related problems. On the other hand, some people experience distress in their daily lives due to long-term excessive gaming habits, which cause them to lose control over their game usage (Kuss & Griffiths, 2012; King et al., 2013). 'Digital game addiction, according to Lemmens et al. (2009) is the excessive and compulsive use of video or computer games in spite of the gamer's inability to control this excessive usage, which leads to social or emotional problems'. A "behavioral problem encompassing persistent and recurrent use of the internet to engage in games, often with other players, leading to clinically significant impairment or distress in a period of 12 months" is what the DSM-5 defines as "internet gaming disorder" (American Psychiatric Association, 2013).

Numerous studies have highlighted the detrimental effects of excessive gaming on a person's psychological well-being. Sharma et al. (2020) examined 403 males aged between 18 and 25 years in Bengaluru and revealed that anxiety significantly contributed to gaming addiction. Another study discovered that adolescent mobile game addiction was linked to higher levels of sadness and social anxiety. (Wang, Sheng, & Wang, 2019). Rujataronjai and Varma (2017) conducted a study on 200 Thai adolescents aged 18 to 20 years and the results showed that video game addiction had a direct link to stress, anxiety, and depression; video game addiction increases in correlation with levels of depression, anxiety, and stress.

In a Norwegian study (N= 2500), a significant association between the severity of video game addiction and symptoms of depression and anxiety was discovered (Mentzoni et al., 2014). A similar finding was also reported by Forrest, King and Delfabbro (2016) showing a positive correlation between depression, anxiety, stress, and gaming addiction. Therefore, this study aims to examine stress, anxiety, and depression among non-gamers, normal gamers, risky gamers, and gaming addicts. To further explore the types of games typically played, numbers of games played and the duration of game play on weekdays and weekends (hours) by normal gamers, risky gamers and gaming addicts.

METHODs

The study was conducted on 120 college students of SGT University, Haryana, India. The study is cross-sectional and data were sorted using a simple random sampling method. Participants within the age group 18 and 35 years (male & female) were divided into four groups;30 non-gamers, 30 normal gamers, 30 risky gamers, and 30 gaming addicts using internet gaming addiction scale.

Procedure

The inclusion and exclusion criteria were used to select the participants for the study. They were explained the study objective and procedure before obtaining the written informed consent. Subsequently, participants were given the sociodemographic data sheet, the internet gaming disorder scale, and the depression, anxiety, and stress scale.

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Measures

1. Socio-Demographic Sheet

The socio-demographic details were collected using a semi-structured proforma including name, age, education, gender, marital status, family type, occupation, socio-economic status, etc. Game-related variables include the number of games played in the last year, the types of games typically played, the age at which a person first began playing games, and the duration of game play on weekdays and weekends (hours).

2. The Internet Gaming Disorder Scale -IGDS (Lemmens, Valkenburg, & Gentile, 2015)

IGDS is a short scale consisting of 9 items for online/offline gaming used for screening and diagnostic purposes. Results scores indicate normal, risky, or disordered gamers. Overall, the scale is a highly effective and easy-to-use tool for IGD screening and assessment, and all the questions are answered with a yes or no. According to Lemmens et al. (2015) for a positive 'diagnosis,' a stringent cut-off of six or more 'Yes' replies may be most suitable. The ‘persistence' item and either the ‘conflict' or ‘problem' item are the most important factors for determining the presence of IGD.

3. Depression, Anxiety and Stress Scale (Lovibond & Lovibond, 1995)

DASS -21 self-report tool for assessing emotional distress. The scale has 21 items with seven items for each category (stress, anxiety and depression). The scale is used to identify signs of depression, stress, and anxiety over the past week. Scores range from 0 to 42 for each of the subscales. The sum of all the three constructs is calculated and multiplied by 2 to get the full score (Lovibond & Lovibond, 1995).

Statistical procedure

The SPSS software 20.0 version was used to analyze the data. For demographic variables, descriptive statistics were computed. To examine differences in categorical chi-square is used and ANOVA is used to determine group differences.

RESULTS

Table 1: Shows socio-demographic profile of non-gamers, normal gamers, risky gamers, and addicts

Variables		Non-gamers	Normal gamers	Risky gamers	Addicts	F/ X^2	Df	p-value
		n=30 Mean±SD/%	n=30 Mean ± SD/n%	n=30 Mean ± SD/n%	n=30 Mean± SD/n%			
Age		22.76 ±4.19	22.53 ±2.38	21.30 ±2.85	21.26 ±3.07	1.85	3,116	0.14
Gender	Male	20(66.7%)	21(70.0%)	25(83.3%)	19(63.3%)	3.348	3	.341
	Female	10(33.3%)	9(30.0%)	5(16.7%)	11(36.7%)			
Religion	Hindu	28(93.3%)	28(93.3%)	28(93.3)	29(96.7%)	1.02	6	.985
	Muslim	1(3.3%)	1(3.3%)	1(3.3%)	0(0%)			
	Christian	1(3.3%)	1(3.3%)	1(3.3%)	1(3.3%)			
Education	Graduation	26(86.7%)	28(93.3%)	28(93.3%)	26(86.7%)	1.48	3	.687
	Post-graduation	4(13.3%)	2(6.7%)	2(6.7%)	4(13.3%)			
Occupation	Working	4(13.3%)	4(13.3%)	3(10.0%)	3(10.0%)	.323	3	.956
	Non-working	26(86.7%)	26(86.7%)	27(90.0%)	27(90.0%)			
Marital status	Married	3(10.0%)	0(0%)	1(3.3%)	1(3.3%)	3.96	3	.265
	Unmarried	27(90.0%)	30(100.0%)	29(96.7%)	29(96.7%)			
SES	Middle	28(93.3%)	28(93.3%)	26(86.7%)	29(96.7%)	2.28	3	.516
	Upper	2(6.7%)	2(6.7%)	4(13.3%)	1(3.3%)			
Family type	Nuclear	19(63.3%)	24(80.0%)	19(63.3%)	20(66.7%)	2.61	3	.454
	Joint family	11(36.7%)	6(20.0%)	11(36.7%)	10(33.3%)			
Habitat	Urban	23(76.7%)	24(80.0%)	27(90.0%)	22(73.3%)	2.91	3	.405
	Rural	7(23.3%)	6(20.0%)	3(10.0%)	8(26.7%)			

*SES: Socioeconomic Status

Table 2: Shows group difference in time spent on weekdays, weekends, and age of onset playing internet games among normal gamers, risky gamers, and addicts.

Variables	Normal gamers	Risky gamers	Addicts	Df	F/ X^2	p-value	Post-hoc bonferroni
	n=30 Mean ± SD	n=30 Mean ± SD	n=30 Mean± SD				
Time spent on weekdays	1.90 ±1.39	3.43 ±1.90	3.70 ±1.6	10.16	2,87	.001	d,c>b*
Time spent on weekend	2.60 ±1.79	4.26 ±2.86	5.0 ±3.09	6.48	2,87	.002	d>b*
Age of onset playing internet games	12.28 ±5.69	12.29 ±3.70	13.50 ±3.15	0.76	2,87	0.46	----------

Table 1 shows that there is no significant difference in age among the four groups. Also, there is no significant difference in gender, religion education, occupation, marital status, socioeconomic status, family type, and habitat among the four groups.

Table 2 shows that there is a significant difference ($p<0.05$) among the groups in the domains of time spent on weekdays and time spent on weekends (hours). On post hoc analysis it was found that on the domains of time spent on weekdays addicts and risky gamers were having significantly ($p<0.05$) higher scores than the normal gamers. Whereas, addicts and risky gamers didn't show any significant differences in time spent at weekdays. On the domain time spent at the weekend, addicts were having significantly ($p<0.05$) higher scores than the normal gamers. Whereas, addicts and risky gamers didn't show any significant differences in time spent at weekend. Similarly, risky gamers and normal gamers didn't show any significant differences in time spent at weekend.

Table 3 shows that there is a significant difference ($p<0.05$) among the groups in the type of game played among normal gamers, risky gamers, and gaming addicts.

Table 3: Group differences in types of games played among normal gamers, risky gamers, and addicts.

Variables		Normal gamers	Risky gamers	Addicts	Df	F/ X^2	p-value
		n=30 Mean ± SD	n=30 Mean ± SD	n=30 Mean± SD			
Types of Games played	Pub G	19(63.3%)	24(80.0%)	20(66.7%)	11	454.26	.001
	FIFA	2(6.7%)	3(10.0%)	1(3.3%)			
	LUDO	4(13.3%)	1(3.3%)	2(6.7%)			
	CRICKET	1(3.3%)	1(3.3%)	2(6.7%)			
	CANDY CRUSH	1(3.3%)	1(3.3%)	2(6.7%)			
	ANGRYBIRDS	1(3.3%)	---	1(3.3%)			
	ASSAINS CREED	1(3.3%)	---	1(3.3%)			
	SUDOKU	1(3.3%)	---	1(3.3%)			

Table 4: Group differences in the number of games played among normal gamers, risky gamers, and addicts.

Variables		Normal gamers	Risky gamers	Addicts	Df	F/ X^2	p-value	Post hoc bonferroni
		n=30 Mean ± SD	n=30 Mean ± SD	n=30 Mean± SD				
Number of games played	One	13(43.3%)	5(16.7%)	4(13.3%)	2	12.80	.002	
	Two	6(20.0%)	9(30.0%)	7(23.3%)				
	More than two	11(36.7%)	16(53.3%)	19(63.3%)				

Table 5: Group differences in depression, anxiety, and stress among non-gamers, normal gamers, risky gamers, and addicts.

Variables	Non-gamers	Normal gamers	Risky gamers	Addicts	Df	F	p-value	Post hoc bonferroni
	n=30 Mean ± SD	n=30 Mean ± SD	n=30 Mean ± SD	n=30 Mean± SD				
Depression	3.43±3.08 ±	1.90±2.50	3.53±3.05	4.80±4.88	3,116	3.45	.019	d>b*
Anxiety	3.10±3.33	2.60±2.64	4.20±3.44	5.60±4.78	3,116	4.00	.009	d>b*
Stress	4.40±2.98	3.13±3.10	5.26±3.76	6.80±5.10	3,116	4.84	.003	d>b**

Table 4 shows a significant difference ($p<0.05$) in the domain of a number of games played among normal gamers, risky gamers and addicts. 19(63.3%) addicts played more than two games as compared to 16(53.3%) risky gamers and 11(36.7%).

Table 5: shows that there is a significant difference ($p<0.05$) among the 4 groups in the domains of depression, anxiety, and stress.

On post hoc analysis it was found that in the domains of depression and anxiety, addicts were having significantly ($p<0.05$) higher scores than normal gamers. Whereas, addicts, risky gamers, and non-gamers didn't show any significant differences in depression and anxiety. Similarly, normal gamers, non-gamers, and risky gamers didn't show any significant differences in depression and anxiety.

On post hoc analysis it was found that in the domain of stress, addicts were having significantly ($p<0.01$) higher scores than normal gamers. Whereas, addicts, risky gamers, and non-gamers didn't show any significant differences in stress. Similarly, normal gamers, non-gamers, and risky gamers didn't show any significant differences in stress

DISCUSSION

The present study aims to explore stress, anxiety, and depression among non-gamers, normal gamers, risky gamers, and gaming addicts. To further explore the types of games typically played, numbers of games played and the duration of game play on weekdays and weekends (hours) by normal gamers, risky gamers and gaming addicts.

The mean age of non-gamers was found to be 22.76, the mean age of normal gamers was found to be 22.53, the mean age of the risky gamer was found to be 21.03 and for addicts, it was 21.26 years.

In the present study, 27 (90.0%) of the non-gamers were unmarried and 30 (100%) of normal gamers were unmarried. Similarly, 29 (96.7%) of the risky gamers group were unmarried and 29(96.7 %) addicts were unmarried. In education 26(86.7%) of the non-gamers were graduates whereas 28(93.3%) of the normal gamers were graduates. Similarly, 28(93.3%) of risky gamers were graduates, and 26(86.7%) addicts were graduates. Also, in current research on socioeconomic status 28(93.3%) of the non-gamers were of middle socioeconomic status, and among normal gamers, 28(93.3%) were of middle socioeconomic status, and 2(6.7%) were of upper socioeconomic status. Similarly, 26(86.7%) of the risky gamers were from middle socioeconomic status and 4(13.3%) were from upper socioeconomic status. Whereas 29(96.7%) of the gaming addicts were from middle-class socioeconomic status and 1(3.3%) were from upper socioeconomic status. Furthermore, 23(76.7%) of the non-gamers belong to an urban background with 19(63.3%) belonging to a nuclear family. Of 24(80.0%) normal gamers from an urban background belong to a nuclear family. Nevertheless, 27(90.0%) risky gamers belong to the urban background with 19(63.3%) belonging to a nuclear family, and 22(73.3%) of the addict gamers belong to the urban background with 20(66.7%) belonging to a nuclear family.

The current study found that addicts (3.70 hours daily) and risky gamers (3.43 hours daily) spent more time on internet gaming on weekdays than the normal gamer (1.90 hours daily). Similarly, addicts spent more time (5.0 hours daily) at the weekend playing virtual games than normal gamers (2.60 hours daily). This finding is in support of the previous research (Lemmens & Hendriks, 2016) found that those with internet gaming disorder spent more time playing online games nearly twice as much as playing offline games.

A previous study by Lehenbauer-Baum & Fohringer (2015) showed that gaming addicts spend more time playing games (30.7 h) per week than engaged players (20.9 h). One explanation is that when gamers are worried or tensed, they tend to play excessively (Ramos-Diaz et al., 2018) and use it as a coping mechanism to minimize negative self-image. Another explanation for addictive video gaming develops due to the positive reinforcement that payers receive actual and fictitious rewards or access to more advanced levels of the game as well as negative reinforcement (avoidance of negative affective states) (Yee, 2006; Choi et al., 2007). Our study observed that the type of game played by the risky gamers 24(80.0%) and addicts 20(66.7%) is Pub G (Player Unknown's Battlegrounds). Whereas,16(53.3%) risky gamers and 19(63.3%) addicts play more than two games,

which is more than normal gamers. Several previous studies have suggested that pathological gamers are more likely to engage in online multiplayer role-playing games (MMORPG's) (Peters & Malesky, 2008; Caplan et al., 2009; Eichenbaum et al. 2015). Furthermore, research demonstrates that real-time strategy and other popular video game genres, like first-person shooters (FPS), are linked to higher levels of pathological & problematic gaming (Metcalf & Pammer, 2014; Eichenbaum et al., 2015). Mannikko et al. (2015) surveyed 271 participants, aged 13 to 24 years to examine specific game genres and motivation associated with problematic use of digital games. They discovered that games with role-playing, action, progression like character development, and strategy features were linked to problematic gaming behavior. Similarly, a study by Elliott et al. (2012) showed that gamers who display problematic gaming behavior preferred action-adventure games, (RPG's) role-playing games, or, first-person shooter games. One possible explanation is that multiplayer role-playing games are more addictive because of their reinforcing and socializing features and competitive aspects as several gamers play simultaneously on one platform. Achterbosch et al. (2008) Additionally, the games are featured in an advanced system where players create an avatar that is constantly evolving and take place in permanent virtual worlds (Cole & Griffiths, 2007; Kuss & Griffiths, 2012).

The current study observed that addicts reported a higher level of depression than normal gamers. This finding is in accord with the previous research by Mentzoni and Froyland (2014) found that adolescent video game addiction is linked to higher levels of depression. Similarly, Andreassen et al. (2016) reported addictive gamers are more depressed than anxious. Several other studies have shown that disordered players are more susceptible to depression (Dong et al., 2011; Gentile et al., 2011; Kühn et al., 2018; Burleigh et al., 2018). One possible explanation is that gaming might provide an escape strategy to alleviate depression (Billieux et al., 2015). Individual who feels worthless and low may utilize internet game to gain a sense of self-worth and fulfillment (Liu et al., 2018; Stvropoulos et al., 2015). Another explanation for this finding is that online gaming is a way to cope with daily pressures, and as a result, gaming can become a dysfunctional media-focused coping technique. The present study observed that addicts reported higher anxiety. This finding is in accord with the previous research (Sharma et al., 2020) that examined 403 males and showed that anxiety significantly contributed to gaming addiction. Mentzoni et al. (2014) evaluated 816 individuals and reported problem gamers had higher levels of anxiety and depression. A longitudinal study (Gentile et al., 2011) showed depression and anxiety as outcomes of pathological gaming.

The present study observed higher stress levels in addicts. This is in agreement with the previous study (Rajab et al., 2020) assessed 2675 school students, and found that gaming addiction was strongly associated with stress. Similarly, Loton et al. (2015) found that addiction significantly affects stress, anxiety, and depression. One possible explanation is that they use gaming as an emotion regulation strategy to help them cope with negative emotions. This appears to be especially problematic because people who play online games excessively are unlikely to develop appropriate stress coping mechanisms because of their preoccupation with online games. Additionally, when they encounter new stressors, they use escapist and media-focused coping mechanisms and this vicious cycle continues (Batthyany et al., 2019).

CONCLUSION AND IMPLICATIONS

The present study adds to the body of gaming literature by understanding the mental set of normal gamers, risky gamers, and gaming addicts. Depression, stress, and anxiety, were found to be significantly higher in internet gaming addicts as compared to normal gamers. The study also revealed that internet gaming addicts spent more time playing internet games. Given the substantial body of research that already exists regarding the detrimental effects of excessive gaming on a person's physical, psychological, and social well-being, the current study strongly indicates that addiction to online gaming is an emerging mental condition in India.

It is essential to sensitize people about the potential risks related to excessive use of gaming leading to disorder. Additionally, the study's findings on the correlates of excessive gaming could be used to create efficient screening methods in identifying those at risk of developing gaming addiction and assist in planning intervention.

LIMITATION

The current study was cross-sectional; therefore, a follow-up study should be designed to have a holistic perspective about the gamers. Small sample size and sample mainly consists of students which limits generalizability of findings. In all groups of the current study, there were few female participants. General Health Questionnaire was not used for screening the normal samples.

FUTURE DIRECTION

The study can also focus on cognitive functions such as working memory, problem-solving, decision making, etc. Future studies can compare online gamers with offline gamers and the impact of both on internet gaming addiction.

Conflicts of Interest: The authors declare no conflict of interest.

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Original Research Article

Suicidal Ideation among Young Adults of Punjab: The Role of Facets of Emotional Dysregulation and Resilience

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ABSTRACT

Objectives: Suicide may be influenced by cognitive and protective elements, including as a person's ability to regulate emotions and resilience in the face of stressors. Previous research has looked at these specific elements in establishing and maintaining suicidal ideation, but only in adolescents (Singh & Singh, 2022) and mostly in western, educated, industrialised, rich, and democratic (WEIRD) settings. This study examined how facets of emotional dysregulation naming non-acceptance of emotional responses; difficulties engaging in goal-directed behaviours; difficulties controlling impulsive behaviours; lack of emotional awareness; limited access to emotion regulation strategies and lack of emotional clarity and resilience predict suicide ideation in young adults.

Method: A sample of 150 (Males = 69) young individuals (age = 25.11, SD = 2.39) from 18 districts of Punjab completed the questionnaires. Step-wise multiple regression was performed to evaluate if the above mentioned six facets of emotional dysregulation and resilience would be able to predict suicidal ideation.

Results: The multiple regression analyses result showed that out of six facets, non-acceptance of emotions, lack of emotional awareness and resilience predicted suicidal ideation among young adults of Punjab. The findings suggest that interventions for young adults who are suicidal should focus on building up their emotional regulation and resilience skills.

Keywords: *emotional dysregulation, suicidal ideation, resilience, young adults, Punjab*

INTRODUCTION

Suicide has been considered a precarious matter of concern in the society. Suicide is defined as the deliberate killing of oneself, and as a phenomenon, it has been inextricably linked with human life for a long time, from traditional relationships to today's complex relationships in big cities (Silverman & De Leo, 2016). World Health Organisation (WHO, 2021) reported that every year over 703000 people lose their lives by suicide. Suicide deaths were more common in low- and middle-income countries around the world (77 percent). Suicide rates in India accounted for 12.7 per 1,00,000 suicides in the South-East Asia region countries in 2019 (WHO, 2021). The National Crime Record Bureau (2021) suggested that a total of 1,53,052 suicides reported in India during 2020 showing an increase of 10.0% in comparison to 2019 and the rate of suicides has increased by 8.7% during 2020 over 2019. The majority of suicide i.e. 48,774 were reported among young adults of aged between 18 to 30 in India during 2020 accounting for 31.8 % of total suicides (NCRB, 2021). Thus, it is necessary to give needful attention to suicide among the young adults of Punjab and its risk and protective factors so that further steps will be taken to protect young from engaging in suicidal behaviours and preventive design policies.

Suicide has been described as the process of different stages, starting with thoughts of death and suicide and ending in self-afflicted death (Wetherall et al., 2018). Suicidal Ideation (SI) or suicidal thinking refers to the idea of contemplating one's own life with some degree of intent (Pederson et al., 2021). A large body of empirical research is devoted to identifying the psychosocial risk and protective factors associated with suicidal ideation among adults. Studies have shown that several including hopelessness, helplessness, depression, rumination, emotional dysregulation, psychological distress and low resilience emerged to be the possible mechanisms that may underlie the development and maintenance of suicidal ideation and behaviour among adults (O'Beaglaoich et al., 2020; Kim & Kihl, 2021). In recent years, a growing evidence has given emphasis upon the emotional aspect in the development of suicidal ideation and behaviour.

Emotion dysregulation refers to the strategies that individuals use to cope with maladaptive emotions, such as restricted or inflexible emotional responses (Gratz & Roemer, 2004). According to Gratz and Roemer (2004) model of emotional dysregulation, it includes (a) a lack of emotional awareness, understanding, and acceptance; (b) an inability to control behaviours when experiencing emotional distress; (c) a lack of access to situational appropriate strategies for modulating the duration and/or intensity of emotional responses to meet individual goals and situational demands; and (d) an unwillingness to experience emotional distress as part of pursuing meaningful activities in life (Gratz & Roemer, 2004). These maladaptive techniques are susceptible to developing into coping styles and internalizing (for example, depressive moods, anxiety, suicidal ideation) and externalizing (for example, violent and suicidal conduct) illnesses over time (Gratz & Romer, 2004; Gross, 2015). It is important to understand that heightened emotion dysregulation may increase the likelihood of engaging in suicidal ideation or

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behaviors in the presence of intense emotions (Lozano-Madrid et al., 2020).

In recent times, the suicide prevention studies have given more attention to the role of resilience in suicidality (Sánchez-Teruel et al., 2021; Siegmann et al., 2018). The concept of resilience originally emerged from the Latin word 'resalire', which means to bounce back or spring back. It has been differently used to depict a substance of elastic qualities (Joseph, 1994). It's a broad concept like an umbrella that is focused on many concepts regarding the positive patterns of adaptation in the face of adversity (Masten & Obradovic, 2007). Research suggests that resilience has been described as an ability, perception or set of beliefs which buffer individuals from the development of suicidality in the face of risk factors or stressors (Reed & Adams, 2020).

According to the existing literature on suicidal ideation, emotional dysregulation and resilience have been investigated, but primarily in western, educated, industrialised, rich, and democratic (WEIRD) settings, and the majority of the studies investigated more severe forms of self-injurious behaviour among the adolescent population (Bozzini et al., 2020; Singh & Singh, 2022). Most research has treated emotional dysregulation as a unitary latent construct, not a multidimensional construct, and have not explored its numerous dimensions and suicidal behaviours. There were no conclusive findings regarding the dynamics of suicidal ideation among Indian young adults. The outcomes of this study may lead to a better understanding of suicidal ideation in the Indian context. There have not been many empirical studies that investigate the role of culture on specific suicidal ideation; however, the available studies suggest that culture plays an important role in regulating suicidal behaviours (Bibi, Blackwell, & Margraf, 2021; Singh, 2022), and an individual's cultural context is essential for changing suicidality.

Given the rising suicide rate among young people, particularly Punjabi young adults (Gill, Goyal, & Gupta, 2020), and the aforementioned gaps, an attempt was made to identify six facets of emotional dysregulation and resilience as predictors of suicidal thoughts among young adults. The current study, in particular, seeks to investigate the role of six dimensions of difficulties in emotion regulation, namely, lack of emotional awareness, lack of emotional clarity, difficulties engaging in goal-directed behaviour, impulse control difficulties, limited access to effective emotion-regulation strategies, and non-acceptance of emotional responses, and resilience in suicidal ideation. Based on the literature review, it was hypothesized that facets of emotional dysregulation, i.e., non-acceptance of emotional responses; difficulties engaging in goal-directed behaviours; difficulties controlling impulsive behaviours; lack of emotional awareness; limited access to emotion regulation strategies and lack of emotional clarity would positively predict suicidal ideation and resilience would have a negative prediction with suicidal ideation.

METHODS

Sample

The sample for the present study comprised of 150 (69 males and 81 females) participants within the age range of 20 to 29 years (M_{age} = 25.11, SD = 2.3) from eighteen districts naming Amritsar, Bathinda, Patiala, Kapurthala, Ropar, Jalandhar, Gurdaspur, Barnala, Sangrur, Faridkot, Fatehgarh Sahib, Mansa, Hoshiarpur, Ludhiana, Moga, Nawanshahr, Mohali, and Sri Mukatsar Sahib districts of Indian state i.e. Punjab. The sample was selected through purposive sampling. Participants with not having suicidal ideation, history of any medical illness, psychosis, substance abuse, pervasive developmental disorder and currently in any psychotherapy were excluded. Participants were administered the scales of suicidal ideation, emotional dysregulation, and resilience via offline and online method. The distribution of participants in terms of sex, education, locality, family type, districts, occupation status, districts, marital status and past history of suicide is given in Table 1.

Table 1 : Demographic and descriptive characteristics of the sample

Demographic characteristics	N	%age	Mean	SD	Skew	Kurt
Age			25.11	2.39	-.002	-1.04
Sex						
Male	69	46.0				
Female	81	54.0				
Education						
Under-graduation	33	22.0				
Post-graduation	103	68.7				
PhD	14	9.3				
Locality						
Rural	31	20.7				
Urban	93	62.0				
Semi-Urban	26	17.3				
Districts						
Amritsar	8	5.3				
Patiala	24	16				
Sangrur	12	8				
Bathinda	11	7.3				
Moga	5	3.3				
Fatehgarh Sahib	9	6.0				
Mansa	11	7.3				
Gurdaspur	5	3.3				
Jalandhar	6	4.0				
Ropar	8	5.3				
Nawanshahr	5	3.3				
Faridkot	7	4.7				
Mohali	6	4				
Hoshiarpur	4	2.7				
Sri Mukatsar Sahib	4	2.7				
Ludhiana	14	9.3				
Kapurthala	5	3.3				
Barnala	6	4.0				
Occupation						
Student	75	50.0				
Self-employed	10	6.7				

Demographic characteristics	N	%age	Mean	SD	Skew	Kurt
Unemployed	8	5.3				
Housewife	2	1.3				
Private service	45	30				
Government service	10	6.7				
Religion						
Sikhism	81	54.0				
Hinduism	58	38.7				
Islam	5	3.3				
Other	6	4.6				
Family Type						
Nuclear	99	66.0				
Joint	29	19.3				
Extended	5	3.3				
Others (alone/hostel/paying guest)	17	3.3				
Marital Status						
Married	15	10.0				
Unmarried	134	89.3				
Divorced/ Widow/ Separated	1	0.7				
Any past history of suicide attempts?						
Yes	31	20.6				
No	119	89.3				
Scores on Suicidal Ideation	150	21.56	5.65		.5.59	1.91
Scores on strategies subscale	150	10.48	2.87	-.31		-.70
Scores on non-acceptance subscale	150	10.44	3.08	-.30		-.82
Scores on impulse subscale	150	10.40	3.05	-.25		-.74
Scores on goals subscale	150	11.62	2.58	-.66		-.12
Scores on lack of awareness	150	11.71	2.56	-0.77		-0.01
Scores on lack of clarity	150	9.41	3.25	-.04		-0.91
Scores on resilience	150	34.70	10.43	-.02		2.03

As shown, values of skewness and kurtosis are within the normal range. Therefore, all the variables met standards of univariate normality as described by Kline (2015).

Measures

In the present study, three measures were used to assess the socio-demographic characteristics, suicidal ideation, facets of emotional dysregulation and resilience. The participants were administered socio-demographic profile, Beck Scale for Suicidal Ideation (BSS; Beck & Steer, 1991); The Difficulties in Emotion Regulation Scale-Short Form (DERS-SF; Kaufman et al., 2016), and The Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003). The participants were first asked about their English language skills, particularly in reading and comprehension, to rule out any language-related biases. They had no trouble understanding questions that were asked in English.

Sociodemographic sheet

The socio-demographic measure tapped data on participant ‘s sex, age, district, education, occupation, marital status, locality, any past history of suicide attempt, family structure, comorbid psychiatric or medical disorder, any major life event, currently in individual/group psychotherapy/ongoing meditation practice/yoga. Some of the items were answered ―Yes/No, others provide several options and some require respondents to write their responses. Items, such as ‘comorbid psychiatric or medical disorder’ and ‘individual/group psychotherapy/ongoing meditation practice/yoga’ were used for the exclusion criteria. For instance, those who responded YES to these items were not included in the present study.

Beck Scale for Suicidal Ideation

The Beck Scale for Suicide Ideation (BSS; Beck & Steer, 1991) is a 21-item self-report instrument for detecting and measuring the current intensity of suicidal ideation in adults and adolescents. It measures the individuals’ specific attitudes, behaviors, and plans to commit suicide during the past week. The first 19 items consist of three options graded according to the intensity of the suicidality and rated on a 3-point scale ranging from 0 to 2. These ratings are k then summed to yield a total score, which ranges from 0 to 38. The first five items serve as a screening items for suicidal ideation. The BSS yields a good psychometric property. For instance, research has shown that has high internal reliability with Cronbach alpha coefficients ranging from .87 to .97 (Beck & Steer, 1991) and has moderate test-retest reliability (r = .54) over a one-week period with psychiatric inpatients (Beck & Steer, 1991).

The Difficulties in Emotion Regulation Scale-Short Form

The DERS-SF is a self-report inventory comprising of 18 items that assesses individuals’ typical levels of emotion regulation difficulties in general, as well as across a number of specific dimensions of emotion regulation. Individuals are asked to indicate how often the items apply to themselves, with responses 5 point Likert scale ranging from 1 (almost never) to 5 (almost always). It examines six clinically relevant difficulties in emotion regulation: (a) lack of emotional awareness (*Awareness*; “I am attentive to my feelings,” reverse-scored; 3 items); (b) lack of emotional clarity (*Clarity*; “I have difficulty making sense out of my feelings”; 3 items); (c) difficulty regulating behavior when distressed (*Impulse*; “When I’m upset, I become out of control”; 3 items); (d) difficulty engaging in goal-directed cognition and behavior when distressed (*Goals*; “When I’m upset, I have difficulty getting work done”; 3 items); (e) unwillingness to accept certain emotional responses (*Non-acceptance*; “When I’m upset, I become angry at myself for feeling that way; 3 items); and (f) lack of access to strategies for feeling better when distressed (*Strategies*; “When I’m upset, I believe there is nothing I can do to feel better”; 3

items). Total scores, which can range from 18 to 90. Higher scores indicate more difficulty in emotion regulation. The internal consistency of DERS-SF is Cronbach's α=.89 (Kaufman et al., 2016)

The Connor-Davidson Resilience Scale

The Connor-Davidson Resilience Scale (CD-RISC) is a brief self-report measure comprised of 25 items. Connor and Davidson found that these items correspond to five factors (Connor & Davidson, 2003). Scoring of the scale is based on summing the total of all items, each of which is scored from 0-4. The total score ranges from 0 to 100, with the higher score reflecting greater resilience. Connor and Davidson (2003) showed acceptable test-retest reliability for the full CD-RISC (r=0.87). Khoshouei (2009) showed test-retest good reliability for the four factors in a factor analysis (r=0.78 to r=0.88).

Procedure

The researcher used a statistical power analysis to estimate the required sample size after compiling the required questionnaire set. A tiny impact size of 0.15 (Cohen, 1988) was predicted based on the effect sizes indicated in prior studies. A sample size of 80 was sufficient with an alpha of 0.01, power of 0.80, and a small effect size (Cohen, 1988). As a result, the current study's sample size (N = 150) was appropriate for the objective. After that, the research proposal was submitted to the Institutional Ethics Committee (Human), which authorised it via letter no. IEC/01-2018/ 04. The data for this study were collected from 18 districts naming naming Amritsar, Bathinda, Patiala, Kapurthala, Ropar, Jalandhar, Gurdaspur, Barnala, Sangrur, Faridkot, Fatehgarh Sahib, Mansa, Hoshiarpur, Ludhiana, Moga, Nawanshahr, Mohali, and Sri Mukatsar Sahib districts of Punjab respectively, India. A total of 1070 participants were approached for the study, out of which 864 individuals responded and 150 individuals came out to be high on suicidal ideation on the basis of threshold score of BSSI. The participants were informed about the purpose of the study and their voluntary participation and were assured of the confidentiality of the information provided by them. The consent of the participants was obtained and they responded on their demographic profile and questionnaires. The acquired data was cleaned and subjected to correlational and regression analysis using IBM SPSS 25.0 in order to test the provided hypotheses. The regression analysis looked at the predictability of suicidal ideation for facets.

RESULTS

Table 2: Inter-correlation among suicidal ideation, facets of emotional dysregulation and resilience

Variables	N	BSS	strategies	Non-acceptance	impulse	Goals	awareness	clarity	resilience
BSS	150	1	.220**	.332**	.310*	.273**	.328**	.204*	-.437**
Strategies	150	.220*	1	.583**	.570**	.520**	.329**	.420**	-.236**
Non-acceptance	150	.332**	.583**	1	.583**	.549**	.285**	.459**	-.188*
Impulse	150	.310*	.570**	.583**	1	.500**	.278**	.332**	-.143
Goals	150	.273**	.520**	.549**	.500**	1	.342**	.332**	-.228**
awareness	150	.328**	.329**	.285**	.278**	.342**	1	.095	-.270**
clarity	150	.204*	.420**	.459**	.332**	.257**	.095	1	-.169*
resilience	150	-.437**	-236**	-.188*	-.143	-.228**	-.270**	-.169*	1

Note- BSSI- Suicidal ideation; **Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed).

Table 2 shows that suicidal ideation showed similar significant and positive relationships with the facets of emotional dysregulation naming lack of access to emotional strategies r (150) = 0.22, $p < 0.01$, non-acceptance of emotions r (150) = 0.33, $p < 0.01$, lack of impulse control r (150) = 0.31, $p < 0.05$, difficulties in goal-directed behaviour r (150) = 0.27, $p < 0.01$, lack of emotional awareness r (150) = 0.32, $p < 0.01$ and lack of emotional clarity r (150) = 0.20, $p < 0.05$. While suicidal ideation was negatively correlated with resilience r (150) = -0.47, $p < 0.01$.

A stepwise multiple regression analysis was carried out to see whether six facets or dimensions of difficulties in emotion regulation, namely, lack of emotional awareness, lack of emotional clarity, difficulties engaging in goal-directed behaviour, impulse control difficulties, limited access to effective emotion-regulation strategies, and non-acceptance of emotional responses and resilience would be able to predict suicidal ideation among young adults of Punjab. As shown in table 3 resilience negatively predicted suicidal ideation, β = - 0.43, t(150) = -5.90, $p < 0.001$. The second variable which appeared as predictor of suicidal ideation of young adults of Punjab is a facet of emotional dysregulation i.e. non-acceptance of emotional responses, β = - 0.25, t(150) = 3.57, $p < 0.001$. The third variable which appeared as predictor of suicidal ideation of young adults of Punjab is another facet of emotional dysregulation i.e. lack of emotional awareness, β = - 0.17, t(150) = 2.27, $p < 0.005$.

Table 3: Stepwise regression of suicidal ideation on facets of emotional dysregulation and resilience

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**R^2**	**ΔR^2**
Model 1				.19	.191*
(Constant)	29.781	1.453			
resilience	-.237**	.040	-.437**		
Model 2				.25	.065**
(Constant)	23.905	2.15			
resilience	-.210	.039	-.388**		
Non-acceptance	.475**	.133	.259**		
Model 3				.28	.026*
(Constant)	19.545	2.86			
Resilience	-.190**	.040	-.350**		
Non-acceptance	.399**	.135	.217**		
Lack of awareness	.379*	.166	.171*		

DISCUSSION

The current study attempted to explore the role of six facets of emotional dysregulation and resilience in suicidal ideation among young adults of Punjab. The regression results showed that out of six facets of emotional dysregulation, two facets i.e. non-acceptance of emotional responses and lack of emotional awareness and resilience emerged out to be significant predictors of suicidal ideation. The results of table 3 shows that 19% of variances are explained by resilience followed by 6.5 % of variances by non-acceptance of emotions and 2.6 % of variances by lack of emotional awareness in the scores of suicidal ideation among young adults of Punjab.

Firstly, in-line with previous research (e.g., Lozano-Madrid et al., 2020; Rodriguez-Cano et al., 2022), the regression results showed that out of six facets of emotional dysregulation, two facets, i.e., lack of emotional awareness and non-acceptance of emotions, emerged to be significant predictors of suicidal ideation. Several studies have shown that lack of emotional awareness/clarity (Rodriguez-Cano et al., 2022) and non-acceptance of emotions (Lozano-Madrid et al., 2020) can be significant predictors of suicidal ideation. The possible explanations of how lack of emotional awareness/clarity and lack of acceptance of emotions of emotional dysregulation can contribute to suicidal ideation and behaviour could be that inability to understand and non-acceptance might lead to cognitive distortions which can modify the decision making of an individual (Singh & Singh, 2022). On the other hand, if an individual fail to understand or accept their emotions, it can cause distress in an individual, and the distress may lead to suicide contemplation and self-harm. Suicide contemplation and self-harm can serve as a coping mechanism for people to control intense and impulsive emotions. This explanation is backed by Mayer et al.'s (2003) model of emotional intelligence, which suggests that emotional intelligence consists of four skill dimensions: perceiving emotion, facilitating thought with emotion, understanding emotions, and managing emotions. Disturbance in any of these behaviours may contribute to self-harm (Hayley et al., 2017).

Another possible explanation could be that lack of awareness and understanding of one's emotions in any perceived distress scenario may further lead to the emotion being experienced as unacceptable. If a person doesn't have many good ways to accept or control their emotions, they may be more likely to act on impulse or based on what they think the situation is. For instance, in a negative social situation, the individual may retaliate by harming himself. Several researchers have proposed that individuals with a few available emotion regulation strategies and the inability to control impulsive emotions under high emotional arousal can give rise to self-sabotaging behaviour for the immediate release of negative emotions (Hayley et al., 2017).

The present study, however, provides an important extension to prior findings by indicating specific areas of emotion dysregulation that can account for suicidal ideation among young adults. In contrast to the previous literature, the regression results of the present study reveal that the four facets of emotional dysregulation, namely lack of emotional clarity, lack of impulse control, lack of emotional strategies, and difficulties engaging in goal-directed behaviors, were not able to predict suicidal ideation after adjusting for it among young adults. It may be that lack of emotional clarity, non-acceptance of emotions, lack of emotional strategies, and difficulties engaging in goal-directed behaviours are more strongly implicated in suicidal behaviour than in ideation (Hayley et al., 2017).

In case of resilience, in-line with previous research, the correlational and regression analyses result demonstrated that resilience merged out to be negatively related to the suicidal ideation (Reed & Adams, 2020). The possible explanation could be that resilience which can be defined as one's ability or set of beliefs about one's self of bouncing back from stressors (Johnson et al., 2011) can offset or protect individuals during the period of emotional distress. However, in the present study, individuals who reported to be low on resilience falling in the realm of Beck's cognitive theory of suicide which suggests that individuals who get stuck in a loop of viewing themselves, their world and the future as unchangeable, defective or hopelessness is associated with increased risk for suicidal ideation or suicide attempts (Bryan et al., 2014).

Similarly, another factor plays a vital role in low resilience could be one's cognitive style and behavioural response processes in stressful situation. The present study's findings can be explained with Rudd et al. (2006)'s theory of suicidal mode suggests that certain cognitive styles and behavioural response processes lend vulnerability to experiencing emotional distress while other cognitive styles and behavioural response processes protect the individual against emotional distress. For instance, negative cognitive styles and behavioural response processes has found to strengthen the relationship of life stressors, hopelessness

and emotional distress on suicidal ideation (Bryan et al., 2014).

However, because of these inherent limitations, the findings of this study should be interpreted with caution. Because the measures used in this study are self-report measures, it's impossible to rule out the possibility of socially acceptable responses. Individuals can better state their emotional and behavioural tendencies than external observers, hence the self-report technique should be more useful. The cross-sectional design could be seen as a drawback; nevertheless, further research could validate the findings of longitudinal investigations. Furthermore, a multi-level study with more predictors may have provided a better understanding of the suicidal ideation analysed.

CONCLUSION

To summarise, the study found that lack of awareness of emotions, non-acceptance of emotions, and resilience have a role in the development and maintenance of suicidal ideation in young adults. The research adds to the body of knowledge regarding suicidal ideation while also making some empirical observations about the underlying dynamics in the Indian population. Researchers and practitioners should consider these aspects when establishing suicidal ideation therapeutic programmes, according to the findings. To put it another way, the data suggest that some types resiliency training programs can help individuals to bounce back from stressful situations without getting overwhelmed by it. Similarly, the data reveals that emotional regulation skills can assist people in regulating the difficult emotions. Therefore, it is suggested to the future researchers and clinicians to develop intervention programmes targeting all the factors, and their efficacy in a broader range of suicidality should be tested. Moreover, the present study is particularly relevant to educational settings and community settings, for example, in schools or colleges, by providing trainings and sensitization programs regarding resilience trainings and emotional regulation skills.

Conflicts of Interest: The authors declare no conflict of interest.

Ethical Approval

Ethical clearance was also obtained from the Institute Ethics Committee (IEC) of Punjabi University Patiala in 2018.

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Original Research Article

Social Phobia Among College-Going Students Following the Covid-19 Outbreak: Links with Internet Addiction

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ABSTRACT

Previous research has revealed a relationship between social phobia and internet addiction, and both variables have become more prevalent in recent years. In a briskly developing country like India, internet dependency has the potential to become a severe public health issue shortly. Aims and Objectives: This study aims to assess the frequency of social phobia and internet addiction among college students after the Covid-19 pandemic, analyze the relationship between the two, and explore if gender impacts these two factors. Participants: The participants comprised 200 students (114 females, 86 males) with a mean age of 22.5 years from various colleges in Haryana, India. Measures: The Internet Addiction Test (Young, 1998) was used to measure the severity of internet addiction, while the Social Phobia Inventory (Connor et al., 2000) was used to assess the degree of social phobia. Data Analyses: Pearson's Product Moment was used to assess the correlation, and the T-test was applied to analyze the gender differences in this study. Results: Gender has no bearing on the level of social phobia or internet addiction, according to the findings. Social phobia and internet addiction affect 42.5 percent and 56 percent of college students, respectively. Furthermore, males and females have a significant positive relationship ($p < .01$) between social phobia and internet addiction, with males having a more robust link.

Keywords: *Social Phobia, Social Anxiety, Internet Addiction, Problematic Internet Use, Internet Dependency*

INTRODUCTION

In social circumstances like dating, attending parties or social gatherings, or making a discussion or presentation to a class or group, it is not uncommon to feel fearful or anxious. These social anxieties are undoubtedly distressing, yet most people who suffer from them manage to operate effectively. For some, the uneasiness of being shy or self-conscious can be unbearable. It is probably more than shyness when somebody is so self-conscious and anxious that he avoids speaking up or socializing most of the time. It may be an anxiety condition called social phobia, which is currently known as a social anxiety disorder (SAD). According to the American Psychiatric Association's (2013) Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5), "The essential feature of social anxiety disorder is a marked, or intense, fear or anxiety of social situations in which the individual may be scrutinized by others." All phobias were lumped together in the first two editions of the DSM of Mental Disorders. However, Marks & Gelder (1966) noticed that different phobias had varying ages of onset and symptom presentations, which led to the inclusion of social phobia as a separate illness in DSM-III.

A study conducted by Jefferies & Ungar (2020) found the global prevalence of social anxiety using a self-report survey to be around 36%. However, there were no gender differences concerning the spread and severity of social anxiety symptoms. In contrast, Sadock et al. (2017) claimed that females are more likely than boys to suffer from social anxiety disorder, which usually begins in early adolescence. Compared to students who lived in urban regions, the likelihood of social phobia increased by 1.6 times for students who lived in rural areas (Desalegn et al., 2019). Poor people are 50 percent more likely than those who are wealthy to suffer from social anxiety disorder (Sareen et al., 2011).

The spread of social phobia in Indian contexts is mainly unclear. One of the recent Indian researches (Kirubasankar et al., 2021) examined 462 teenage students aged 14 to 18 years from a union territory in the country's southern region. In this study, the female participants were found to have more prevalence rates for SAD as compared to males, and the overall prevalence rate was 17.1%. In another study, 7.8% of the study participants (undergraduate university students) had a possible generalized social anxiety disorder, while 23.1 percent had a probable distinctive (non-generalized) social anxiety disorder, according to Honnekeri et al. (2017). Specific social anxiety was more common in women than men, but there was no substantial sex difference in generalized social phobia (Honnekeri et al., 2017). Those with SAD were more likely to be unhappy with their well-being, remain sad most of the time, experience psychological discomfort, consider their quality of life as bad, and be dissatisfied in numerous dimensions of life than pupils without SAD (Hajure & Abdu, 2020). In terms of social anxiousness, there is no significant difference between males and females; besides that, female teenagers scored greater than boys, which is worth mentioning (Yayan et al., 2017). 43.9 percent and 19.1 percent of Malaysian students, respectively, had moderate and severe social phobia (Norhizan et al., 2019).

"Internet addiction is characterized by excessive or poorly controlled preoccupations, urges or behaviors regarding computer use and internet access, that lead to impairment or

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distress" (Shaw & Black, 2008). In 1995, a psychiatrist from New York named Ivan Goldberg was the first to recognize the issue of internet addiction. While Goldberg lost interest in the subject, Kimberley Young, an American, was the first to systematically and critically explore this phenomenon in various investigations (Cornelius & Hermann, 2011).

India currently has the world's second-largest internet users (China has the most), and the figure is multiplying yearly. The aggregate internet surfers jumped from 825.30 million in the last week of March 2021 to 833.71 million in the last week of June 2021, reflecting a quarterly pace of growth of 1.02 percent, as per The Indian Telecom Services Performance Indicators (2021). Adolescents in Turkey were found to have a prevalence rate of 13.7 percent for internet addiction, with 4.2 percent spending more than 5 hours a day on the computer, and those who spend much time on the internet have a poor view of their academic success (Yayan et al., 2017). Jaiswal et al. (2020) found that the greater part of study participants (48.2%) exhibited moderate internet addiction, accompanied by mild internet addiction (42.3%).In addition, 3.3 percent of the individuals had severe internet addiction. In addition, Kumar & Mondal (2018) found that 39.5% of the students under study were severe internet users, and these users had more psychopathological symptoms than moderate internet users, including obsessive-compulsive, interpersonal sensitivity, depression, and anxiety. People who were addicted to the internet were four times more seemingly to be depressed than those who were not (Elavarasan et al., 2018). There were considerable gender differences in internet usage, with men being more severely addicted than women (Anwar, 2014; Menon et al., 2018). However, Weinstein et al. (2014) found contradictory results claiming no dissimilarity between boys and girls in internet addiction scores.

According to some studies, internet addiction may aid in understanding social phobia. Social phobia, depression, stress, and anxiety, according to Jafari & Fatehizadeh (2012), can predict 39% of internet addiction ($p < .001$). Similarly, suicide, dysthymia, depression, social anxiety, and phobias were common comorbidities amongst internet-addicted teenagers, according to Khalil et al. (2022). A clear positive relationship between internet dependency and social anxiety has been identified in several pieces of research (Wei et al., 2012; Weinstein et al., 2014; Yayan et al., 2017; Norhizan et al., 2019; Jaiswal et al., 2020).

Furthermore, the more serious the symptoms of social anxiety were among Taiwanese computer video game addicts, the stronger the addiction to computer games since they presented the player with an alternate virtual reality that allowed him to avoid social challenges in real life (Wei et al., 2012). A study (Campbell et al., 2006) in Sydney, Australia, produced opposite results, demonstrating that the internet may be utilized to deal with social anxiety and even lessen it. As a result, internet chatting can be used to improve social skills. Elavarasan et al. (2018) discovered that 52.5 percent of those addicted to the internet had social phobia, which is statistically significant, and that people addicted to the internet had three times the risk of developing social phobia compared to people who were not addicted to the internet. Yen et al. (2007) discovered that internet addicts and non-addicts have significantly different social phobia mean scores in a study of school children in Taiwan, with internet addicts scoring higher.

The impact of the Covid-19 pandemic on people's social anxiety cannot be neglected. Many people are experiencing new or greater social anxiety as society reopens. People who had previously been diagnosed with social phobia enjoyed the opportunity to retreat into a cocoon of isolation, free of the pressure to interact with strangers or attend social functions. Rather than confronting their worries, people were advised to avoid the outer world during the pandemic, which only promoted social anxiety. Furthermore, the transition from offline to online education created an environment that inhibited adolescents' social connections and communication with teachers, peers, and other members of society, causing them to become less socially active. According to statistics, the risk of developing social anxiety due to Covid-19 is more than other psychological disorders (Kumar et al., 2021). Furthermore, an investigation of 204 adults in the United States revealed that before the COVID-19 epidemic, the average social phobia score was 16.35 (SD=14.96), but after the disease outbreak, it rose to 18.94 (SD=16.39), and this change was statistically significant (Thompson et al., 2021). Also, overall usage of the internet and online recreational activity increased considerably throughout the epidemic, and nearly half of people in China reported an increase in the severity of internet addiction (Li et al., 2021). Teenagers generally use online platforms as a compensatory method for face-to-face communication and are less hesitant to form social bonds when conversing online (Baker & Oswald, 2010).

It can be argued unequivocally that the internet is a widely utilized platform known to induce addictive behavior. In a swiftly developing country like India, Internet addiction has the potential to become a severe public health concern shortly. It has been demonstrated in the above studies that social anxiety and internet addiction have escalated significantly in recent years, probably due to the Covid-19 pandemic. However, few studies in India have examined the link between internet addiction and social phobia, particularly in the aftermath of the Covid-19 outbreak. Also, there is misleading evidence about whether gender influences social phobia and internet addiction, which necessitates further research. Because India already has the largest number of internet surfers after China, and this figure is rapidly expanding, it is vital to figure out if internet addiction plays a role in developing or worsening social phobia symptoms so that effective prevention and treatment models may be developed. This study looks at a group of college students to see if there is a connection between internet dependency and social anxiousness, especially in the aftermath of the pandemic. Also, it examines gender differences concerning these two variables, supplementing prior research findings and outcomes.

Objectives

1. To investigate the gender differences in severity of internet addiction.
2. To investigate whether gender influences the level of social phobia.
3. To ascertain the relationship of social phobia with internet addiction for male and female groups.

Hypotheses

1. Females exhibit a higher degree of social phobia as compared to males.
2. Males show a higher degree of internet addiction as compared to females.
3. There is a significant positive association between social phobia with internet addiction for males and females.

METHOD

Participants

Two hundred students from various Haryana colleges were recruited using convenience sampling. All those who gave consent to participate in the study were included. They were 22.5 years old on average, with a standard deviation of 3.13. There were 114 (57%) female students and 86 (43%) male pupils. The bulk of those who took part were unmarried (92.5%). Regarding where the participants lived, 62 percent lived in an urban location, while 38 percent lived in a rural area.

Measurement Tools

Social Phobia Inventory (SPIN, Connor et al., 2000)

SPIN (Connor et al., 2000) is the 17-item self-report rating inventory used to screen and measure the severity of social phobia. The SPIN takes a few minutes to fill out, although clients require a basic reading level to understand the statements adequately. Each of the 17 items is assigned a score of 0 to 4: not at all, a little bit, somewhat, very much, and extremely. The higher the score, the more phobic the individual is. The scale is rated over the previous week and includes items assessing social phobia symptom domains (fear, avoidance, and physiologic arousal). The minimum and maximum scores can be 0 and 68, respectively. Subjects with and without social phobia can be distinguished by a cut-off value of 19. It has high test-retest reliability, internal consistency, and convergent and divergent validity.

Internet Addiction Test (IAT, Young, 1998)

IAT (Young, 1998) is a 20-item questionnaire that assesses the presence and severity of internet addiction in teenagers and adults. It assesses the intensity of self-reported compulsive internet use in adults and adolescents. The IAT considers Internet addiction an impulse-control disorder, and "internet" encompasses all forms of online activity. When self-administered, the IAT takes 5 to 10 minutes to complete. Each item is rated 0 to 5 on a 5-point scale. The IAT total score ranges from 0 to 100, with a higher number indicating a higher level of internet compulsivity and addiction. Scores ranging from 0 to 30 points are believed to reflect a normal level of internet usage; 31 to 49 points suggest a mild degree of internet addiction; 50 to 79 points indicate a moderate level, and 80 to 100 points indicate a severe level of internet use addiction. The scale's internal reliability was 0.91 using Cronbach's alpha coefficient, and the item-total correlations were also determined, and the values for the 20 items ranged from 0.37 to 0.63 (Samaha et al., 2018).

Procedure

Participants were assured of confidentiality, and their consent was requested after establishing rapport. All participants were given an overview of the questionnaires, and any doubts were cleared. They were also briefed about their role in the data collection process. The questionnaires were distributed using Google forms. First and foremost, a questionnaire with a few basic questions about their age, sex, residency, and marital status was provided, followed by internet addiction test and social phobia inventory. The subjects were required to mark answers to each question. The manuals were used to score the questionnaires, and the data were analyzed using the SPSS 26 program.

RESULTS

Social phobia impacted 36 percent of the men in the current study, with 2.3% being very severely affected, 3.5% severely affected, 15.1% moderately affected, and 15.1% mildly affected. In the case of females, 47.4 percent had social phobia, with 1.8% very severely affected, 2.6% seriously afflicted, 10.5% moderately concerned, and 32.5% mildly affected. Of the overall participants, 57.5 percent of individuals reported no social phobia, 25% had mild social phobia, 12.5 percent were moderately affected, 3 percent reported severe social phobia, and 2 percent had extremely severe social phobia. Consequently, 42.5 percent of people under study had social phobia, which is substantial. Females also have slightly greater mean SPIN scores than boys, according to the current study. However, as seen in Table 1, the difference is not statistically significant. Also, Cohen's d's value reflects a small effect size.

Table 1: ***Significance of difference between the mean scores of two groups***

Variable	Girls		Boys		t (198)	p	Cohen's d
	M	SD	M	SD			
Social Phobia	18.9386	11.76487	16.2558	14.23598	-1.458	0.146	0.205
Internet Addiction	33.5702	16.53421	35.1628	18.20657	0.646	0.519	0.091

In the case of internet addiction, 31.4 percent of males were mildly addicted, and 24.4 percent were moderately affected. Apart from that, 39.4% of females were mildly addicted to the internet, while 16.7% were moderately dependent. On the whole, 56.1 percent of girls were addicted to the internet, identical to the male group (55.8 percent). Regarding the total number of participants, 56 percent were classified as internet addicts, with 36 percent being slightly affected and 20 percent moderately addicted. Also, none of the participants reported severe internet addiction. Furthermore, there is a slight difference in the mean scores of boys and girls, with boys scoring slightly higher than females on the IAT, as indicated in Table 1. However, it is not statistically significant, and also, Cohen's d value suggests a trivial effect size. The association between internet addiction and social phobia was determined using Pearson's Product Moment correlation. As far as gender differences are concerned, the degree of interdependency between internet addiction and social anxiousness differs between men and women (see Table 2). The relationship between both variables is significant and positive for both males and females. However, the strength of the correlation is stronger for the male group than the female group. There is a modest positive correlation between problematic internet use and social anxiety in the male group, whereas the female group showed a mild association in the positive direction. Similarly, the intercorrelation between internet dependency and social phobia is substantially positive for the overall participants. ($r = .36$, $p < .01$).

Table 2: ***Intercorrelations for Study Variables Disaggregated by Gender***

Variable	1	2
1. Social Phobia	-	.26**
2. Internet Addiction	.47**	-

Note. The result for the female sample ($n = 114$) is shown above the diagonal. The result for the male sample ($n = 86$) is shown below the diagonal.

*p < .05

**p < .01

DISCUSSION

The current study examined the link between social phobia and internet addiction and whether gender impacts these two factors. The outcomes of this study align with some of the prior research findings while contradicting others.

According to our findings, girls are more prone than boys to have symptoms of social phobia. Several other studies back up similar findings. For example, according to Asher & Aderka (2018), the lifetime prevalence of SAD for male and female groups was 10.9 percent and 13.5 percent, respectively. In addition, Kirubasankar et al. (2021) also conducted research on 462 students, of whom 48.7% were males and 51.3% were girls. Females accounted for roughly 63 percent of the 79 students who met the social phobia cut-off score, while males accounted for only 37 percent. Social anxiety disorder, which usually develops in early adolescence, is more common in girls than boys (Sadock et al., 2017). Likewise, the current study discovered no significant differences in mean SPIN scores between boys and girls, indicating that boys and girls have a similar degree of social phobia symptoms, rejecting the first hypothesis. However, the female group's mean is slightly higher. Other studies also investigated similar results (Yayan et al., 2017; Jefferies & Ungar, 2020).

There were no wide gaps in the occurrence of internet dependency between genders, according to our findings, implying that both boys and girls have an equal probability of being addicted to the internet. Similarly, there is no statistically significant difference in IAT mean scores between boys and girls, indicating that both boys and girls have comparable levels of internet addiction. As a result, our second hypothesis has been rejected as well. A study (Weinstein et al., 2014) found no significant difference in Internet addiction scores between boys and girls, confirming similar findings. Furthermore, in their study, Deniz Günaydın (2021) found that gender is not a significant predictor of internet addiction. The present study's findings contradict those of Anwar (2014) and Menon et al. (2018), who claimed that men are much more dependent on the internet than women in earlier studies.

The association between social anxiousness and problematic internet use for the overall participants is positively significant. It indicates that as people become more addicted to the internet, they become more anxious in social situations. School, work, and other daily activities may be hindered due to this dread. Numerous studies (Yen et al., 2007; Wei et al., 2012; Weinstein et al., 2014; Yayan et al., 2017; Elavarasan et al., 2018; Norhizan et al., 2019; Jaiswal et al., 2020; Khalil et al., 2022) have found that internet addiction has a significant part in explaining social anxiety in people, confirming current findings. In the case of gender differences, both males and females have a significant positive link between internet addiction and social phobia. So, our third hypothesis has failed to reject, as evidenced by current data. However, males have a stronger relationship than females which means boys addicted to the internet are more likely than their female counterparts to develop social phobia or vice versa. A recent study backed up our findings, concluding that there is a significant link between social anxiety and problematic internet use and that the link is more potent in males than in women (Baloğlu et al., 2018).

CONCLUSION

It can be claimed from the results that socially anxious people are at risk of developing internet addiction because of their distorted beliefs of unfavorable judgment by other people during face-to-face conversations, which drive them to seek out safer forms of communication. The practice of interacting online is reinforced since it aids in reducing social anxiety in socially nervous persons. Consequently, increasing the time for internet surfing. Moreover, Social phobia can also develop due to Internet addiction, as people spend more time online and avoid socializing due to its reinforcing properties. This bi-directional interplay

between social anxiety and internet addiction could lead to mutual worsening, which would explain the relationship.

Ultimately, It highlights the need to enhance community knowledge of internet addiction and social phobia, including educating the general public, health employees, and medical professionals working in India's primary health care systems. Moreover, healthcare practitioners and community-based clinicians should be involved in assessing children for social phobia whenever they present with psychological issues like internet addiction. We must design health awareness programs to encourage young people to use the internet healthily, and parental monitoring and effective communication must handle internet usage among adolescents.

Conflicts of Interest: The authors declare no conflict of interest.

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Original Research Article

Self Esteem Among Children of Alcoholic Abstinent and Relapsed

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ABSTRACT

Introduction: Alcoholism is one of the ancient and complex habits of disorders known in the history of humankind. The impact of alcoholism is not only seems to be on the individual per se, but there is large extent on families as well as on their children. There is a general consensus that, children of alcoholics constitute a "High risk" population, children tend to model their parents in their upbringing. Children are susceptible for low self-esteem, and psychological wellbeing impacting in their future adulthood.

Aim: To assess Self-esteem among the children of Alcoholic Abstinent and Relapsed Employees in an Industrial Setting.

Materials and methods: The sample consisted of 30 children of alcoholic abstinent and 30 children of Alcoholic relapsed employees from large public sector undertaking, Bangalore. The sample was selected on the basis of inclusion and exclusion criteria. Socio-demographic data sheet and Culture free Self-esteem Inventory were administered to the children.

Results: Children of alcoholic in the abstinent group have found higher mean score as compared to the Children of alcoholic relapsed group in all the domain except one. In the domains like General self-esteem, Social/peer related items, Academic/School related self –esteem items and Parent/home related self–esteem items children of abstinent groups have faired better, however in one domain i.e. lie items/items indicting defensiveness the relapsed group have higher score. However which was statistically not significant.

Conclusion: It was evident that there is much better self-esteem in children of alcoholic abstinent than children of relapsed employees. There is a strong need to focus on shaping the career of the children and boost their self-esteem by providing psychosocial intervention and other therapies.

Keywords: *Children of alcoholics, Self-esteem, Parenting, Psychosocial intervention.*

INTRODUCTION

Alcohol has been an integral part of our society from immemorial times. The negative impacts of alcohol use disorder (AUD) is not only on individual per se, but a larger extent on families as well as on children. About 30 per cent people in India consume alcohol on a regular basis (WHO 2018). Many negative effects of alcohol use are commonly seen among alcohol consumers but unfortunately, they are not always restricted to themselves. The potentially detrimental effects of alcohol use are seen among their family members, loved ones and the social elements in their immediate environment. For instance, children living among such families with a history of alcohol use often face traumatic situations having implications on their physical, psychological, social, educational, and spiritual growth. Due to alcohol related problem, parents have little or no time for their children and have unsteady relationships with them.

According to a Japanese proverb, "First the man takes a drink, then drink takes a drink, and finally drink takes the Man". This reflects the typical process of alcoholism i.e. social drinking, regular drinking, and pathological drinking. For many decades alcoholism was considered primarily within the context of moral transgression or depravity, social deviancy, public-drunkenness was usually laughed

at, but in severe cases it was dealt with punitive criminal justice system.

In Indian settings, the problem of alcohol dependence is assessed either exclusively or as part of psychiatric epidemiological surveys. Alcohol use is often considered as a family illness, the family members along with the active user. Escapism or side-cornering from the intensified zone of problems due to alcohol use becomes a challenging task for almost every member.

The majority of alcoholic's impairments are behavioural. Due to such behavioral impairments, the daily life of the family is affected on a severe level. The family members are often confronted with alcoholic behaviour which increases their confusion bewilderness, anger, fear and agony. The behavioral responses of family characteristically are as impaired as the alcoholics.

There is a high risk for developing AUD among those who start using alcohol in their adolescence. They display a cluster of disinhibited behavioural patterns which are usually present in their childhood and find a way to their adulthood and may remain persistent throughout their life (Haber JR, Jacob T, Heath AC2005 & Begleiter H, Projesz B.1999).

There is often pain, guilt, fear, tension and a feeling of insecurity in a family with current alcohol use. Alcohol use is usually thought as a bad habit rather than being a disease which can be controlled or cured without the intervention of a mental health professional. This generates role conflicts

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among the family members and affects their functioning in multi-dimensions. These role-conflicts are very commonly seen among children. Since, alcohol use is considered as a family secret, thereby, children rarely seek any help (Cork 1969).

Children in an alcoholic family are exposed to high risk situations which may often contribute to the substance use comorbid with emotional and/or behavioural problems like hyperactivity, learning disabilities and psychomotor delays and somatic symptoms for instance. These aspects of the alcohol have grasped the attention of many researchers from across the world. In past, this trend has been continued and as a result, many attempts have been made to study various psychological aspects among children of parents with AUD in India also (Rao et al.2001, Silva et al. 2007, Muralidharan et al. 2008, Stanley et al. 2008).

METHODOLOGY

The present study was aimed to assess the experiences shared by the Children of Alcoholics abstinent and relapsed industrial employees. The research study was an exploratory in nature, where in two groups of children of employees in the two categories working in Industrial settings were compared.

Aim of the Study: To find out the self-esteem or self confidence of children of alcoholic abstinent and relapsed employees. The universe for the study was Public Sector Undertaking (PSU), Bengaluru. Two groups consisting 30 children of alcoholic abstinent and 30 children of alcoholic relapsed employees fulfilling inclusion and exclusion criteria were taken for the present study.

Inclusion Criteria:

1. Children of abstinent and relapsed employees.
2. Eldest child of each of the families.
3. Both boys and girls, between 10-17 years of age.

Exclusion Criteria:

1. History of major mental illness, mental retardation and brain damage.
2. Children who are being reared by the relatives than the parents.
3. Children crossed the age of 17 years.

Tools:

Keeping in view of the aim of the study a semi structured interview schedule consists of sociodemographic details along with Culture free self-esteem were considered as tool for present study.

Culture Free Self-Esteem Inventory:

This scale was developed by Battle J. (1981). It has a set of 3 inventories measuring self-esteem in children and adults. The scale has three forms, Form A, Form B, and Form AD. Form A, which contains 60 items and measures self-esteem in children. These items are exclusive to dimension, there is no overlapping.

Item specificity of the domains are given as follow.

The form A has 60 items classifiable into 5 subscales:

a. General Self-esteem items. (1, 3, 7, 11, 13, 15, 18, 20, 22, 24, 27, 30, 33, 36, 38, 41, 43, 45, 47, 49)

b. Social/ peer related self-esteem items. (2, 8, 14, 21, 28, 34, 39, 46, 52, 57)

c. Academic/School related items. (4, 9, 16, 23, 29, 35, 40, 48, 54, 58)

d. Parents/home related items. (5, 10, 17, 25, 31, 37, 42, 50, 55, 59)

e. Lie item/items indicating defensiveness. (6, 12, 19, 26, 32, 44, 51, 53, 56, 60)

The items in the instruments are divided into two groups those which indicate high self-esteem and those which indicate low self-esteem. The subject checks each item as either "Yes" or "No". For positive item numbers 2,4,5,10,11,13,14,15,16,17,21,22,28,35,38,39,42,43,45,48, 49, 52,55,58 (24 Items), and lie items 6,12,19,26,32,44,51,53,56,60 (10 Items) the responses 'Yes' is given one points and 'No' is given zero point. For remaining i.e. negative items 1,3,7,8,9,18,20,23,24,25,27,29,30,31,33,34,36,37,40,41,46 ,47,50,54,57,59 (26 items) the scores 'Yes' is given Zero point and 'No' is given one point. This inventory is widely used for assessing the self-esteem in children. Hence, the scale was administered for assessing the self-esteem in the children of alcoholic.

The total score for this inventory are derived by totaling the number of items checked that indicate high self-esteem without lie items. The highest total scores on form A is 50 and on lie scale it is 10.

Data Analysis:

The data collected was scored, coded, tabulated and analysed statistically keeping view of the aim of the study. Data analysis was done by using appropriate statistical test like descriptive statistics, T-test and correlation.

RESULTS

The age distribution in both the group shows that, most of the children of abstinent (60%) and relapse (66.67%) are in the age group of 16 years. In the abstinent group, there was aequal distribution of gender, wherein, in relapsed group 60% respondents were male and 40% respondents were female. It was also noticed that, majority of the children are first born. The table further reflect the education details, wherein it was found that, majority i.e. 43.33% respondents were in abstinent group and 40% respondents were in relapsed groups are studying in SSC. Maximum numbers, 93.33% and 86.67% respondents are belongs to Hindu religion in both the groups. Most of the respondents were having invariably 3-5 persons in their house. Interestingly, it was noticed that most of the respondents are staying in Nuclear family set up.

Sociodemographic details of the Children of Alcoholic Abstinent and Relapsed Employees

Sl. No.	Socio-Demographic Characteristics		Abstinent Group		Relapsed Group		Inferences
			Number	*Percentage*	*Number*	*Percentage*	
1.	Age (In Years)	12	1	3.33	2	6.67	X^2=0.821 df=1 NS
		13	2	6.67	4	13.33	
		14	2	6.67	2	6.67	
		15	3	10.00	1	3.33	
		16	18	60.00	20	66.67	
		17	4	13.33	1	3.33	
2.	Gender	Male	15	50.00	18	60.00	X^2=0.617 df=1 NS
		Female	15	50.00	12	40.00	
3.	Birth Order	Ist Born	11	36.67	14	46.66	X^2=0.606 df=1 NS
		IInd Born	9	30.00	3	10.00	
		IIIrd Born	6	20.00	8	26.67	
		IVth Born	2	6.67	5	16.66	
		Vth and Above	2	6.67	0	0.00	
4.	Education	Below SSC	11	36.67	15	50.00	X^2=1.806 df=1
		SSC	13	43.33	12	40.00	
		HSC	5	16.67	2	6.67	
		Diploma/ITI	1	3.33	2	3.33	
5.	Religion	Hindu	28	93.33	26	86.67	P=0.335 NS
		Muslim	0	0.00	1	3.33	
		Christian	2	6.67	3	10.00	
6.	Type of Family	Nuclear	27	90.00	29	96.67	P=0.306 NS
		Joint	3	10.00	0	0.00	
		Extended	0	0.00	1	3.33	

Table 2: Culture Free Self-esteem Inventory

Differences between Children of Alcoholic Abstinent and Relapsed Employees

Sl. No.	**Culture Free Self-esteem sub scales**	**Abstinent Group (n=30)**		**Relapsed Group (n=30)**		**Inferences**
1.	General Self-esteem	Mean SD	13.30 3.39	Mean SD	9.60 2.14	t=5.04 p<0.001
2.	Social/ peer related self-esteem items.	Mean SD	7.25 1.43	Mean SD	6.20 1.27	t=3.04 p<0.01
3.	Academic/School related items.	Mean SD	6.26 1.92	Mean SD	3.46 2.08	t=5.40 p<0.001 df=58
4.	Parents/home related items.	Mean SD	8.03 1.90	Mean SD	4.26 2.22	t=7.04 p<0.001 df=58
5.	Lie items/items indicating defensiveness.	Mean SD	4.36 1.60	Mean SD	4.70 1.14	t=0.92 NS df=58
	Total	Mean SD	39.23 5.88	Mean SD	28.23 6.12	t=7.09 p<0.001 df=58

Findings in the above table show that, children in the abstinent group have higher mean score as compared to the relapsed group in all the domain except one. In the domains like General self -esteem, Social/peer related items, Academic/School related self –esteem items and Parent/home related self–esteem items children of abstinent groups have faired better, however in one domain i.e. Lie item/items indicting defensiveness the relapsed group have higher score, however which was statistically not significant.

DISCUSSION

On analyzing the sociodemographic details, it was found that there is no significant difference between the abstinent and relapsed group. Therefore, they are comparable inferences can be drawn as there is homogeneity between the two groups on these variables. Most of the families from both the groups are Hindus, nuclear families, means that the family members of an alcoholic would not get as much support as they would if they were in joint family system.

In the current study majority of the respondents are first born in both alcoholic and relapsed category. It further indicates that, they are vulnerable for role strain as eldest child in the family. William O.B. (1992),found that growing up in a household with alcoholic or mentally ill parents are more likely to produce lower self- esteem, greater dysphoria and more anxiety in adulthood. Majority of the respondent's family size is medium i.e. there are 3 to 5 members in each family.

Although it was observed that, children of abstinent group had better self-esteem as compared to the children of relapsed group. When total score for each dimension were tested, it was noticed that children of abstinent group had scored relatively high on all the dimensions except one. According to Benegal (2005), the subject itself is of low priority and funding for research is low and so there is little by way of a body of published literature in India.

The overall self-esteem significantly varies between children of abstinent and children of relapsed groups. This could be due to the inability of relapse fathers to give up alcohol, fearful home atmosphere, lack of family responsibility, reflecting towards children and lack of emotional support.

Maccoby and Martin (1973), found that, positive parental affect has been related to positive outcomes for children, including higher self-esteem, better emotional development and lower levels of aggression.

People with healthy self-esteem see themselves as valuable and competent enough to form and maintain better relationships with others due to some unique coping skills. In contrast, people with low self-esteem depict negative self-image and poor self-concept due to which their ability to form relationships is hindered and they feel threatened and unsuccessful to experience a feeling of kinship. Also, they are unable to express their assertiveness while holding on to strong negative emotions to share their warmth with others.

Study findings reveal that, the highest level of self-esteem has been seen among children of alcoholic abstinent as compared to children of relapsed employees. Tarderet. al, (1985), compared adolescent sons of alcoholics and non-alcoholics and found that, sons of alcoholic have a neurotic profile and to have more developmental and familial problems.

It was also observed that, there is a very high social or peer related self-esteem in children of abstinent compared to children of relapsed group. This shows that relapsed group feels low while talking or interacting with neighbours and others, so that they will keep a distance with them and the children will gradually develop inferiority feeling among themselves leading to overall low self-esteem. In Roosa, Sandler's (1998), study of school children, children who identified having problem in drinking parents, reported lowers self-esteem and greater depression.

Werner LJ (1991), has strong evidence and he concluded that family dysfunction during the childhood can negatively influence later life experiences and adjustment. There was significant difference found between children of abstinent and children of relapsed employees on academic/ school related self-esteem items. In the current study it was evident that, the family atmosphere had significantly contributed towards lower self –esteem particularly among the children of relapsed employees in the given setting.

CONCLUSION

The present study was focused on the self-esteem on the children of alcoholics, it was evident that there is much better self-esteem in children of alcoholic abstinent than children of relapsed employees. There is a greater need for providing psychosocial intervention not only for the alcoholics and their spouses but also for the children. The counsellors can provide all the necessary interventions with their knowledge, specialised training and effective skills which can assist the children in improving their self- esteem and carry positive attitude for attaining desired goals in their life.

Conflicts of Interest: The authors declare no conflict of interest.

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Original Research Article

Prevalence of Internet Gaming Disorder (IGD) among Youngsters

Ravi Shankar Kumar[1] and Das Ambika Bharti[2*]

ABSTRACT

Background: Excessive Internet usage and video gaming among children and adolescents is of severe health concern which makes them more vulnerable to adverse health and psycho-social consequences. **Aim:** The current study aimed to find out the prevalence rate of internet gaming disorder (IGD) and its associations with demographic characteristics among youth of Bihar, an Indian state with highest multi-dimensionally poor population. **Methods:** A total of 466 participants, aged 15 to 29 years, were drawn from the state of Bihar through snowball sampling technique. Youth demonstrating IGD was screened with the 9- items internet gaming disorder scale. Children scoring 5 or more on it were screened for IGD. Descriptive statistic was used to show the prevalence rate and associated demographic characteristics. **Results:** The prevalence rate of IGD among youth was categorically 26.8% for disordered gamers and 38% (177) for the risky gamers. It was more prevalent in male (22.5%) than female (4.3%). Education, gaming hours per day and week, quality of sleep, presence of media in bedroom, and interference in professional/school, personal & social life were identified as the most significant associated factors of IGD. **Conclusion:** Online gaming disorders are on rise, which had led the youth of Bihar for psychological disturbances, sleep disturbances and problems in education. The findings advocate for further clinical and research studies and need for innovative interventions to address IGD.

Keywords: *IGD, Prevalence, Youth, Bihar, Psycho-social consequences, Sleep disturbances, Interventions*

INTRODUCTION

Internet gaming disorder (IGD) has received much research attentions since the release of the first commercial video game in early 1970s, especially after the incident of several high-profile cases of violence due to gaming issues (such as the Colorado movie theatre massacre conducted by James Holmes in 2012). Various studies had been conducted to investigate different aspects of IGD, which include validation of assessment tools (Lemmens et al., 2009; Tejeiro Salguero & Morán, 2002; Wölfling et al., 2011), identification of potential impacts of IGD (Kim et al., 2008; Männikkö et al., 2015; Vollmer et al., 2014), and examination of comorbidity with other addictions (Griffiths, 2008; King et al., 2010).

Internet gaming disorder (IGD) was included as a non-substance addiction in the appendix of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) published in 2013 by the American Psychiatric Association (APA, 2013). Nine criteria are used to identify IGD, namely preoccupation (being absorbed by gaming and spending amounts of time thinking or fantasizing about gaming even during times of non-play), tolerance (spending increased amount of time on games to feel desired effects, such as satisfaction or excitement), withdrawal (emerging symptoms, such as being restless, angry, irritated, anxious, sad, or frustrated, which occur when one is unable to play or when one is attempting to reduce or stop gaming), escape (engaging in certain behaviors in order to relieve or escape from negative mood states, such as guilt, helplessness, depression, or anxiety), persistence (having long-lasting desire for gaming or having unsuccessful attempts to control, reduce, or stop gaming), problems (continuing in gaming even though negative consequences of gaming behavior are evident in one's central areas of life), deception (deceiving, lying, or covering up to others the amount of gaming behavior), conflict (losing an important relationship, occupation, opportunity in school or work due to gaming behaviors), and displacement (having the gaming behavior as dominant over other social or recreational activities) (Lemmens et al., 2015; APA, 2013). Five or more criteria lead to a diagnosis (Petry et al., 2014). Despite its name, the disorder may also involve non-internet video games (APA, 2013).

Prospective longitudinal exploration has found that gaming can lead to life difficulties, with cause for concern (Gentile et al., 2011). Students could soon fail out of college, struggle to obtain a basic job, and experience significant difficulties making friends. Students living in campus, with unrestricted internet access, risk them for spending significant time on gaming. This often has detrimental effects on their academics, social connectedness, and personal health (Sioni et al., 2017; Brunborg et al., 2014; Kuss, 2013). Online gaming also drains productivity in the workforce with companies responding by actively blocking gaming sites (Fausta & Prochaska, 2018).

The Covid-19 pandemic has led to an inevitable surge in the use of digital technologies due to the social distancing norms and nationwide lockdowns (De' et al., 2020). After this covid-pandemic, people and organizations all over the world have had to adjust to new ways of work and life. Everyone has been dependent to internet and online

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methods for their daily activities. This has really made the young population more prone to gaming and internet (De' et al., 2020). According to the IAMAI-Kantar ICUBE 2020 report the number of active Internet users (AIU) in India is expected to increase by 45% in the next five years and touch 900 million by 2025 from around 622 million in 2020. The report defines an active user as someone who has accessed the Internet at least once in the past month. As per this report about 96% of users access the internet for entertainment, Bihar, the Indian state, with the highest population that is multi-dimensionally poor (NITI Aayog, 2020) too is reported to have 24% of AIU (Anurag & Kaur, 2021).

In India, there is a scarcity of studies regarding prevalence and associated factors with Internet Gaming Disorder despite the fact that internet usage is rising day by day in the country (Bisht et al., 2021). Hence, in this study the prevalence rate of IGD was investigated for along with the associated factors among the youth of Bihar, India.

METHODS

Objectives

1. To find the prevalence rate of Internet Gaming Disorder among youth of Bihar, India.
2. To identify the associated socio-demographic factors for Internet Gaming Disorder (IGD) among youth of Bihar.
3. To identify the gaming related risk factors for Internet Gaming Disorder (IGD) among youth of Bihar.
4. To identify the associated personal risk factors for Internet Gaming Disorder (IGD) among youth of Bihar.

Sample

Snowball technique was used to draw the study sample from different parts of Bihar. A total of 466 youth (N=466) was taken for the study. Sample comprised of youth of both genders, with age ranging between 15-29 years and compulsorily using internet and playing online or offline games.

Design

The present study follows the descriptive research design. The socio-demographic variables that are included and explored in the study as possible investigated for its relevance in IGD included gender, residential area, family types and education. The variables that are investigated in the study as gaming related risk factors for IGD included bedroom media and hours spent on gaming and other associated personal risk factors like interference in daily life and sleep disturbances.

Tools used

1. Socio-demographic and personal data sheet: This is self-prepared for collecting relevant demographic and clinical data like age, gender, residential area, education, family type, time spent, purpose, bedroom media and childhood experiences.

2. The Internet Gaming Disorder Scale (Lemmens et al., 2015): The short version (9 items) was used as screening tool to assess IGD. The dichotomous 9-item IGD scale has strong psychometric properties. Latent class analysis of this dichotomous scale indicated that the three groups could be discerned: normal gamers (score < 2), risky gamers (2–4), and disordered gamers (5+). The authors report an internal consistency of 0.93. Criterion validity was evaluated by correlating the IGD scale with time spent on games, loneliness, self-esteem, life satisfaction, pro-social behaviour, and aggression. The IGD scale had a Cronbach's alpha reliability of .90.

Procedure

The 466 youth were drawn from the different districts of Bihar state following the snowball technique. Informed consent was taken from the participants. The psychological self-report measure of IGDS was administered on them for screen purpose. Data on relevant socio-demographic characteristics, game related factors and the personal factors to be studied as risk factors in the study were collected using the socio-demographic and personal data sheet. The ethical guidelines prescribed by the APA were followed throughout the process. SPSS-20 version was used for data handling and analysis purpose.

RESULTS

Table 1: Prevalence profile of IGD in Bihar (N=466)

	Frequency (*f*)	Percentage (*%*)
Normal gamers	164	35.2
Risky gamers	177	38.0
Disordered gamers	125	26.8

Table 1 shows the overall prevalence of disordered gamers to be 26.8% (125), risky gamers to be 38% (177) and normal gamers as 35.2% (164) among the youth from Bihar.

As we can see in Table 2, there was a significant difference on the prevalence level between male youth and female youth ($\chi 2$ =15.606, p<.001).Thus significant gender difference is seen in the youth of Bihar state. Further significant difference in IGD status was reported with respect to the education level of the participants. Of various levels of education i.e., $<10^{th}$ class, 10^{th} class, 12^{th} class, UG, PG and >PG was significantly associated with IGD ($\chi 2$ =12.967, p<.05). Residential area and family type were not significantly associated with IGD.

Table 3 depicts a significant association between IGD and bedroom media ($\chi 2$ = 23.216, p<.001) and hours spent on gaming per day ($\chi 2$ = 88.068, p<.001). Among the bed-room media TV was found to be the most significant associated factor for IGD, closely followed by computer. Bed-room media and hours spent on gaming per day could be identified as significant risk factors for IGD.

Table 2: Comparing Socio-demographic characteristics of participants screened as IGD and non IGD

Socio-demographic Characteristics	Category	IGD status			p-value
		Yes, n (%)	No, n (%)	Total, n (%)	
Gender	Male	105 (22.5)	222 (47.6)	327 (70.2)	(χ2 =15.606) <0.001***
	Female	20 (4.3)	119 (25.5)	139 (29.8)	
Residential Area	Urban	69 (14.8)	211 (45.3)	280 (60.1)	(χ2 = 1.700) 0.192
	Rural	56 (12.0)	130 (27.9)	186 (39.9)	
Family Type	Nuclear	78 (16.7)	181 (38.8)	259 (55.6)	(χ2 =3.219) 0.073
	Joint	47 (10.1)	160 (34.3)	207 (44.4)	
Education	<10	5 (1.1)	10 (2.1)	15 (3.2)	(χ2 = 12.967) <0.05*
	10th	34 (7.3)	112 (24.0)	146 (31.3)	
	12th	30 (6.4)	52 (11.2)	82 (17.6)	
	UG	44 (9.4)	97 (20.8)	141 (30.3)	
	PG	10 (2.1)	54 (11.6)	64 (13.7)	
	>PG	2 (0.4)	16 (3.4)	18 (3.9)	

***P<0.05, ***P<0.001**

Table 3- Relation of IGD in Youth according to Gaming related risk factors

Possible associated factors	Category	IGD status			p-value
		Yes, n (%)	No, n (%)	Total, n (%)	
Bedroom Media	T.V	49 (10.5)	109 (23.4)	158 (33.9)	(χ2 = 23.216) <0.001***
	Computer	26 (5.6)	34 (7.3)	60 (12.9)	
	Play-station	6 (1.3)	7 (1.5)	13 (2.8)	
	No-media	33 (7.1)	162 (34.8)	195 (41.8)	
	T.V. +Computer	11 (2.4)	26 (5.6)	37 (7.9)	
	All media sources	0 (0.0)	3 (0.6)	3 (0.6)	
Hours spent on gaming per day	0-5	92 (19.7)	339 (72.7)	431 (92.5)	(χ2 = 88.068) <0.001***
	6-10	27 (5.8)	1 (0.2)	28 (6.0)	
	11-15	6 (1.3)	1 (0.2)	7 (1.5)	

***P<0.001

Table 4- IGD and its relationship with associated personal risk factors among Youth

Personal factors	IGD status			p-value
	Yes, n (%)	No, n (%)	Total, n (%)	
Interference in personal life	53 (11.6)	45 (9.8)	98 (21.4)	($\chi2$ = 54.25) <0.001***
	63 (13.8)	296 (64.8)	359 (78.6)	
Interference in social Life	84 (18.5)	73 (16.0)	157 (34.5)	($\chi2$ = 101.13) <0.001***
	31 (6.8)	239 (52.4)	298(65.5)	
Interference in professional/ school Life	85 (18.6)	101(22.1)	186 (40.8)	($\chi2$ = 67.98) <0.001***
	31 (6.8	239 (52.4)	270 (59.2)	
Lower sleep quality	55 (12.0)	85 (18.5)	140 (30.5)	($\chi2$ = 18.722) <0.001***
	64 (13.9)	255 (55.6)	319 (69.5)	
Delayed sleep onset	68 (14.7)	127 (27.4)	195 (42.0)	($\chi2$ =11.403) <0.001***
	56 (12.1)	213 (45.9)	269 (58.0)	
Interrupted sleep	44 (9.5)	57 (12.3)	101 (21.7)	($\chi2$ =18.269) <0.001***
	81 (17.4)	283 (60.9)	364 (78.3)	

*****P<0.001**

The results in the Table 4 shows that the IGD was found significantly associated with interference in personal life ($\chi2$ = 54.25, p<.001), social life ($\chi2$ = 101.13, p<.001) as well as in professional/school life ($\chi2$ = 67.98, p<.001). Further, Table 4 also reveals that lower sleep quality ($\chi2$ = 18.722, p<.001), delayed sleep onset ($\chi2$ =11.403, p<.001), and interrupted sleep ($\chi2$ =18.269, p<.001) were also found significantly associated with IGD.

DISCUSSION

To the extent of our best knowledge, the current study is the first study to report the prevalence of IGD and its association with various key aspects of socio-demographic among the youth of Bihar, (India).

Prevalence of IGD

The present study was done to find out the prevalence of gaming disorder among youth in Bihar. Out of 466 participants who responded to the IGD questionnaire 125 youth have IGD scores equal to and above 5. The prevalence of IGD was found to be 26.8% (125) followed by risky gamers 38% (177) and normal gamers 35.2% (164). This study found that overall prevalence of IGD was 26.8% in youth of Bihar. The present study is in line with the recent findings of a systematic review of epidemiological studies on the prevalence of Internet Gaming Disorder in various countries with the reported prevalence of Internet Gaming Disorder i.e., 0.7% - 27.5% (Mihara & Higuchi, 2017). Additionally, this finding is also similar with the study conducted on college students of India found prevalence of 23% (Bisht et al., 2021).

Gender

In the present study, the prevalence of IGD among youth was high i.e.,22.5% in males in comparison to females i.e., 4.3% with a significant p-value of <0.001. This means that the risk of developing IGD in males is more compared to females. Above results are seen in the study by Singh et al. (2021) on 13-19 years old students that male student (15.3%) had significantly higher prevalence than female students (3.5%). This finding is also congruent to the study of Schou Andreassen et al., (2016) that reports higher problems of IGD among males. In general, males are having higher level of participations in online or offline gaming because males are more prone to participate in riskier games like shooting and MMOG. This gender disparity is might be because most of the games usually been developed by males for males, which is mostly tempting to males. Gaming companies do marketing in a way to attract more boys, which leads to the involvement of more boys in the gaming

activities, and there are not many games that attract girls (Nasr, 2020).

Residence

The residence of the majority of the study participants with IGD was from urban areas 14.8%, and from rural areas 12%. The result was not statistically significant. The pandemic and psychosocial environment have a great impact on the lifestyles of children, urban children because of the geographical constraints tend to stay more at home and are involved in multimedia, on the other hand, the chances of outdoor gaming are more among rural children (Clements, 2004).

Family type

The prevalence of IGD is high in nuclear family (16.7%) than joint family (10.3%). But this is not statistically significant. It may be due to the involvement of both the family in these gaming activities.

Education

In the present study, it was found that the prevalence of Internet Gaming Disorder was significantly high in 10^{th} class students (7.3%) and undergraduate students (9.4%). Prevalence is high in class 10^{th} and undergraduate students as during this pandemic, the reason may be that class 10^{th} was promoted into next class without exams and for undergraduate students, they were not having much pressure for careers, so they were more involved in these gaming activities (Faust & Prochaska, 2018).

Bedroom media

The present study revealed a significant association between IGD and the presence of media in the bedroom. The result indicates that participants who have bedroom media are likely to develop an IGD. In the same way, youth having electronic device in the bedroom were found to report delayed bed time, brief sleep duration, and poor functioning during the day as compared to youth having no device in their bedroom (Brunborg et al., 2011; Shochat et al., 2010). Similarly, Gentile et al., (2017) conducted a study on children and found the same findings that children having bedroom media were more likely to use devices than study and were vulnerable to develop IGD.

Time spent on gaming

In the present study 125 were identified as IGD youth, 92(19.7%) of them are in the category of investing gaming per day in 0 to 5 hours and in accordance with the present study King & Delfabbro (2016) also reported the average time spent playing by individuals with IGD was 3 hours. Followed by 27 IGD youth falls in the category of 6 to 10 hours per day and 6 IGD youth lies in the category of playing 11 to 15 hours per day. This above finding is supported by the study which reposts that IGD users are involving in gaming approx. 8-12 hours per day (Baggio et al., 2016).

Interference in personal, social and professional life

A significant association between IGD and interference in the personal, social and professional life was seen in the study. These results got similar findings by Kuss, (2013) and Sioni et al., (2013) which also states that gaming behaviour are interfering in the daily normal routine, creating academic problems in children and social issues also. A study on adolescent players by Kowert et al., (2014) found that those who play regularly online games had substantially smaller offline social groups.

Sleep Problems

Respondents with IGD were found significantly associated with lower sleep quality, delayed sleep onset, and interrupted sleep. The findings of this study are also congruent to the study of Achab et al., (2011) which reports that individuals with gaming habits have a poorer quality of sleep and increased daytime sleepiness. The study conducted by Archana et al., (2019) reports that 40% of the study participants reported disturbance in the lifestyle in the form of sleep disturbance. Sleep problems like delayed sleep onset, interrupted sleep and lower sleep quality is prominently there in the pathological gamer's adolescents (King et al., 2014)

CONCLUSION

The present study has given an estimate of the prevalence of IGD in the youth of Bihar, (India) and its association with gender, residential area, family type, education, bedroom media, time spend in gaming activities, interferences in personal, social and professional /school life, and quality of sleep and disturbance. The overall prevalence rate of IGD among youth was categorically 26.8% for disordered gamers and 38% (177) for the risky gamers. The rate of indulgence of youth in gaming is increasing at an alarming rate and this may adversely affect the health of the individuals and their commitment to studies in the long run. There is a need to create awareness among students, teachers, schools, and concerned authorities about the harms associated with excessive gaming and various factors for the development of IGD (Singh et al., 2019).

LIMITATION

The current study has a few limitations and contains self-reported data that could be biased in the direction of both over-reporting and /or under-reporting. Due to the cross-sectional nature of the study, it is difficult to conclude any casual interpretations.

Conflicts of Interest: The authors declare no conflict of interest.

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Brief Research Communication

Feasibility and effectiveness of Rumination Focused Cognitive Behaviour Therapy (RFCBT) in Patients With Depression and Anxiety Disorders- A Preliminary Investigation

Pratishtha Petwal[1], Paulomi M. Sudhir[1*] and A. Shyam Sundar[2]

ABSTRACT

Objective: The current study is a preliminary trial examining the effectiveness of Rumination-focused cognitive behaviour therapy (RFCBT) in patients with depression and anxiety disorders.

Method: A two-group intervention design was adopted. The control group received Mindfulness Meditation (MM). Four patients with a diagnosis of depression, generalized anxiety, or social anxiety disorder received either RFCBT or MM. Participants completed measures of symptom severity, repetitive negative thinking (RNT), and work and social adjustment at baseline and post-intervention.

Results: Overall RFCBT was more effective than MM in reducing symptoms and in reducing RNT.

Conclusions: RFCBT is a promising intervention for emotional disorders and mindfulness at RFCBT share common mechanisms.

Keywords: *Rumination Focused Cognitive Behaviour Therapy, Repetitive Negative Thinking, Rumination, Worry, Mindfulness*

INTRODUCTION

Anxiety disorders and depression are highly prevalent, comorbid disorders that together contribute to more than half the disease burden in India for psychiatric disorders (Gautham et al., 2021). Recent research into the transdiagnostic framework highlights shared underlying cognitive, affective, and behavioral processes, which contribute to the occurrence and maintenance of these disorders (Sauer-Zavala et al., 2017). The transdiagnostic approach to CBT is an integrative approach, targeting these shared processes as mediators of change in therapy (Sauer-Zavala et al., 2017), and helps in addressing commonly observed comorbidity. Repetitive Negative Thinking (RNT) is identified as a transdiagnostic mechanism underlying various psychological disorders, commonly explored as rumination and worry. RNT has been identified as a critical factor contributing to the occurrence and maintenance of emotional disorders (McEvoy, Watson, Watkins, & Nathan, 2013).

Rumination Focused Cognitive Behavioral Therapy (RFCBT), a recent addition to the third wave of cognitive-behavioral interventions (Watkins, 2016) is based on the transdiagnostic nature of rumination. RFCBT involves a functional analytic approach to rumination wherein rumination is conceptualized as a habitual response and a form of avoidance. Therefore, it aims to change avoidance behaviors and facilitate the development of more adaptive approach behaviors. Another unique aspect of RFCBT is that it focuses on shifting the information processing style from an unconstructive, evaluative style to one that is more constructive and problem-focused (Watkins, 2016).

Preliminary work in RFCBT indicates that it is efficacious in treating individuals with depression and anxiety (Cook, Mostazir & Watkins, 2019; Hvenegaard et al., 2020). Empirical evidence for RFCBT is growing, however, its role as a transdiagnostic intervention requires further exploration, specifically across clinical and cultural settings. Mindfulness-based interventions have been found to be effective across psychological disorders and the reduction in rumination is a mediator of symptom reduction (Heeren & Philippot, 2011). Therefore, we used Mindfulness Meditation (MM) as an active control, to match therapist contact and facilitate comparisons of RCBT with an established treatment, on similar outcomes. This case series is a preliminary attempt to examine the effectiveness and feasibility of RFCBT in improving symptoms and repetitive negative thinking.

Design and sample

A two-group design with baseline and post-intervention assessments was adopted. Four patients, diagnosed with depression, generalized anxiety, or social anxiety disorder, aged 18 to 50 years, stabilized on medications for 1 month, were recruited for the study.

Measures

The MINI International Neuropsychiatric Interview 7.0.2. (Sheehan et al., 1998) was administered to confirm the primary diagnosis and assess for other Axis I comorbidities. The Structured Clinical Interview for the DSM-5 Personality Disorders (First, Williams, Benjamin & Spitzer, 2016) was used to assess personality disorders.

The primary outcome measure was the severity of depression and anxiety, on the Depression, Anxiety, Stress Scales (DASS) (Lovibond & Lovibond, 1995).

The severity of illness and improvement were rated by an independent blind rater on the Clinical Global Impression (CGI) Scale (Guy, 1976).

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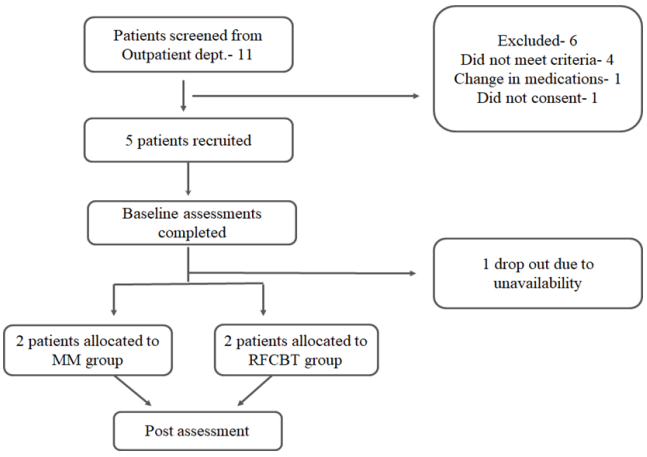
Rumination was assessed using the 22-item Ruminative Response scale of the Response style questionnaire (RRS) (Nolen-Hoeksema & Morrow, 1991). The Penn State Worry Questionnaire (PSWQ) (Meyer, Miller, Metzger & Borkovec, 1990), a 16-item self-report measure was administered to assess the patient's experience with worry.

Work and Social adjustment scale (WSAS) (Mundt, Marks, Shear & Greist, 2002), a 5-item self-report scale, was used to measure the degree of social and occupational functioning impairment. All participants completed a weekly 'tracking of rumination and avoidance' form before each session, to record the frequency, intrusiveness, and controllability of rumination and avoidance.

Procedure

Participants were screened for eligibility and recruited from the outpatient mental health service of a tertiary mental health care facility and sequentially allocated to receive either RFCBT or Mindfulness Meditation (Figure 1). Baseline assessments were carried out on all measures and post-intervention assessment was carried out on outcome measures after 10-12 weekly sessions.

The study was reviewed and approved by the Institute Ethics Committee and registered under the Clinical Trials Registry (CTRI/2019/08/020776). All participants provided informed consent.



Flow diagram (RFCBT- Rumination focused cognitive behaviour therapy; MM- Mindfulness Meditation)

Treatment Program

The treatment program was based on RFCBT for depression described by Watkins and colleagues (Watkins, 2016). The program uses a functional analytic approach. Specific triggers for rumination are identified, and individuals are trained to use more effective responses using contingency 'If-then plans' in place of unconstructive rumination. These alternate responses are guided by the identified idiosyncratic function of rumination and may include progressive muscle relaxation, assertiveness, problem-solving skills, imagery, and visualization, using concreteness, absorption, or compassion towards self/others (Watkins, 2016).

Mindfulness meditation (MM) included introducing the mindfulness model, followed by training in mindfulness, with breathing, body-scan mindfulness meditation, mindfulness of sounds and thoughts, and mindfulness in daily activities (eating and walking mindfulness) (Majgi, Sharma & Sudhir, 2006).

Participants received 10-12 weekly sessions of treatment, with each session having a duration of 45 minutes- to 1 hour. Each session focused on assigning and reviewing homework.

Analysis

Clinically significant therapeutic change from baseline to post-intervention was calculated using the formula given by Blanchard and Schwarz (Blanchard & Shwarz, 1988).

$$\frac{\text{Prescore - Post score}}{\text{Prescore}} \times 100 = \text{Therapeutic change}$$

RESULTS AND DISCUSSION

This study examined the effectiveness of RFCBT in reducing symptoms of depression and anxiety, and RNT in individuals with depressive and anxiety disorders.

Sample description

The sample included 4 participants (RFCBT-2, MM-2), with graduate-level or higher education, with an average age of 27 years (range- 19-35 years). The average duration of illness was 21 months (range- 8-36 months). All four patients were diagnosed with moderate depression. Three of the four patients had recurrent depressive disorder and comorbid diagnosis of social anxiety disorder.

Primary outcome measures

Clinically significant changes were noted on DASS and CGI in three out of four patients (Figures 2 and 3). Both patients receiving RFCBT reported reduced depression and anxiety severity, whereas one patient who received Mindfulness (MM) reported improvement in symptoms. Similarly, on the CGI-I and CGI-S, both patients who received RFCBT and one patient who received MM had significant improvement and lowered severity scores. Although both RFCBT and MM led to reductions in symptom severity, these changes were not consistent in the MM group.

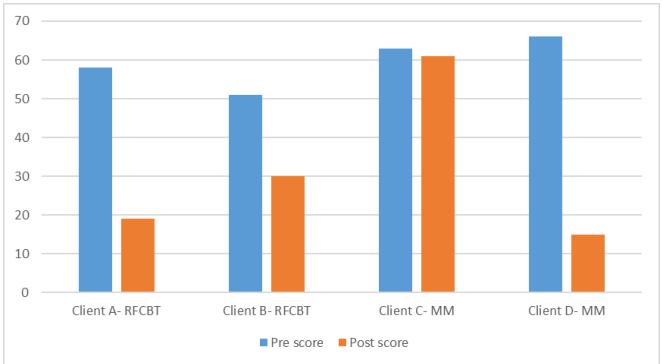


Figure 2- Changes in scores on Depression, Anxiety and Stress Scale; RFCBT- Rumination focused cognitive behaviour therapy; MM- Mindfulness Meditation

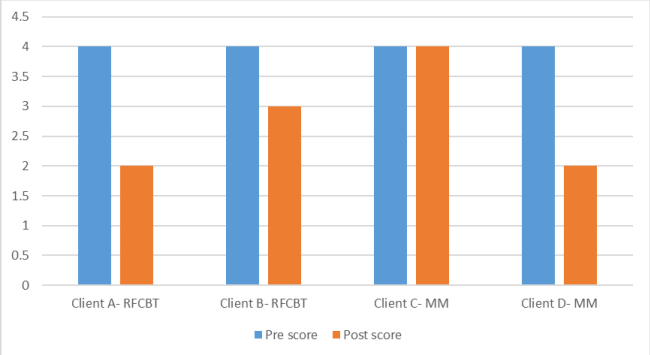


Figure 3- Changes in scores on Clinical Global Impression-Severity Scale; RFCBT- Rumination focused cognitive behaviour therapy; MM- Mindfulness Meditation

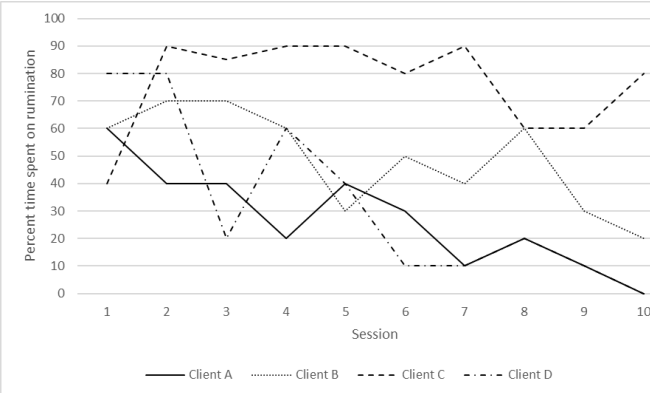
Mindfulness has been established as an effective intervention for anxiety and depression (Heeren & Philippot, 2011). In the present study, one participant receiving mindfulness intervention and both participants who received RFCBT showed clinically significant improvement in symptoms, supporting the effectiveness of both interventions in symptom reduction.

Secondary outcome measures

Repetitive negative thinking (RNT)

With respect to scores on ruminations, the changes in scores were similar across RFCBT and Mindfulness. One participant receiving RFCBT showed a significant change of 58% in rumination scores on RRS, while the other showed an 8% reduction and in the mindfulness intervention, one patient showed a 51% change in ruminations, while the other reported a 13% reduction in ruminations. On the PSWQ, both participants receiving RFCBT and one participant receiving mindfulness showed marginal improvement with a change of 25%, 12%, and 37% respectively. One participant receiving mindfulness reported worsening of worry.

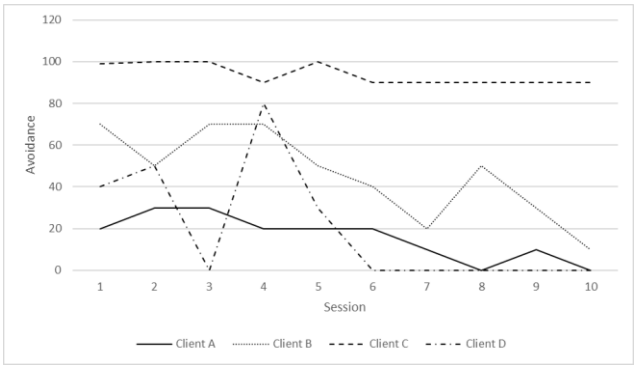
Figure 4. Session wise tracking of the percentage of time spent on ruminations



Treatment groups- Client A and B- Rumination focused cognitive behaviour therapy; Client C and D- Mindfulness Meditation

On the weekly assessment of the frequency, duration, and control over ruminations, three of the four participants showed significant reductions in the time spent on rumination (Figure 4), reporting more control over the rumination and less interference in daily activities. However, one participant receiving mindfulness reported no improvement in rumination over the course of therapy. With respect to avoidance, participants receiving RFCBT showed significant changes with a reduction in avoidance, greater control over avoidance, and reduced interference due to the avoidance. While one participant receiving mindfulness showed changes in avoidance (Figure 5).

Figure 5. Session wise tracking of avoidance



Treatment groups- Client A and B- Rumination focused cognitive behaviour therapy; Client C and D- Mindfulness Meditation

Work and social adjustment

On WSAS, both participants receiving RFCBT group and one participant receiving MM showed clinically significant improvement of 100%, 52%, and 91% change in scores respectively. Two of these participants, one from each intervention reported near-complete improvement in functioning.

Overall similar levels of improvement in outcomes of symptom severity, functioning and RNT were seen in both interventions. This can be attributed to the common mechanisms of change across the interventions. The practice of mindfulness enhances attentional control by shifting attention to concrete targets such as the breath and bodily sensations (Heeren & Philippot, 2011), thereby reducing ruminations and worry. This is similar to the strategy in RFCBT that aims at shifting processing style through concreteness training and absorption exercises (Watkins, 2016) targeting unconstructive thinking. Arousal reduction is another common goal that is achieved through meditation in mindfulness and progressive muscle relaxation in RFCBT. Delineating these mechanisms of change can therefore be an important focus in future research to further compare their relative efficacy.

CONCLUSION

Participants in both groups improved on outcome measures indicating that both interventions were effective in addressing depression and anxiety. RFCBT could be a promising intervention for patients with emotional disorders, as indicated by the findings of this study. The

findings indicate that targeting RNT is important and is a common element in both MM and RFCBT. The study provides evidence for the feasibility of RFCBT in our setting in improving RNT, avoidance, and symptom severity. The sample size was small; therefore, we could not carry out more statistical analyses. The strengths of the study include the use of a manualized treatment protocol, and inclusion of an active comparison group, with equivalent therapist contact in both groups. In terms of future research, using a larger sample, with active comparison groups, like Metacognitive therapy or Cognitive Behaviour Therapy, could provide more robust evidence for the efficacy of RFCBT.

Conflicts of Interest: The authors declare no conflict of interest.

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Review Paper

Positive Psychology Interventions , A Review : Suggestion for Future Directions

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ABSTRACT

The discipline of Psychology has metamorphosed with the introduction of Positive Psychology in the 1990s. From understanding disorders and developing a treatment module, the focus has shifted upon conceptualizing a good life and moving towards it. Positive Psychology Interventions (PPIs) have established themselves as the harbingers of change in the field of mental health and well-being with a focus on neoteric methods for self-enhancement. The present paper attempts to gain deeper insight into the field of positive psychology: from its inception to the ideology behind it, in the context of published literature. Research on PPIs is still in its nascent stages, especially concerning their effectiveness in varied cultural contexts. Although a plethora of interventions are currently being used with both clinical and non-clinical populations, psychology stands on the verge of benefiting from their applications. The paper has implications for understanding PPIs in greater depth and conceptualizing culture and sample-specific interventions to maximize well-being.

Keywords: *Positive Psychology, Positive Psychology Interventions, Mental Health, Well-being, Happiness, Savoring, Gratitude, Empathy, Optimism*

INTRODUCTION

Positive psychology can be understood as the science as well as application of positive emotions and psychological strengths (Snyder and Lopez, 2007). The antecedents of this stream of study can be found in the humanistic movement philosophy but unlike it, positive psychology is more rigorous and scientific due to the methods used by positive psychologists (Seligman and Csikszentmihalyi, 2000). Research in this field has been growing and expanding rapidly, along with an increase in assessment tools and interventions.

PPIs intended to enhance happiness have been widely researched and validated (eg: Seligman, Steen, Peterson and Parl, 2005; Lyubomirsky, 2008). The research findings have been documented and found a way to reach the masses by various journals dedicated especially to the study of positive psychology, like *The Journal of Positive Psychology, Journal of Happiness Studies*, to name just a few. Positive psychology hence is at a juncture where it is past the predicament of establishing itself as a "valid" area or research, and rather, is a quintessential area of research in today's time. Research also states that because of the immense benefits of happiness, it is necessary to include it as an indicator of a good life or quality of life, along with traditional economic indicators (Diener and Seligman, 2004). Debates around positive psychology have focused on concepts like “the good life” as essential to be integrated into the field, reflecting the prescriptive value attached to these constructs (Woolfolk and Wasserman, 2005). Seligman, however, sees the study of positive psychology as descriptive, rather than prescriptive because, for him, the aim of positive psychology must not be to direct a person to be more positive, optimistic, or kind, but rather to understand and describe the consequences of adapting these traits (Seligman, 2002). Positive psychology has now expanded beyond the field of psychology, extending into health, psychiatry and even neuroscience (Seligman, 2019).

Rationale

The present review was undertaken to explore the various PPIs contributing to well-being, the previous literature supporting the activities, and to explore the gaps in the present intervention modules. The western focus on positive psychology, happiness and well-being has acted as a catalyst for researchers in India to explore the effectiveness of PPIs in India on one hand, and integrating the knowledge from ancient Indian scriptures like the *Vedas, Upanishads, Mahabharata, Bhagwat Gita,* etc on the other. The aim of the review is to explore the effectiveness of various PPIs as well as highlight the current status of PPIs in India.

Positive Psychology Interventions

The last two decades have seen a shift towards studying techniques to enhance happiness and well-being, studied under the umbrella of positive psychology interventions (PPI). Positive Psychology Interventions (PPIs) are intentional activities aimed to cultivate positive affect/feelings, cognitions or behaviours. They encompass a variety of activities or methods such as writing, practising and/or cultivating certain strengths, which have proven effective to enhance well-being by multiple studies (Fordyce, 1977; Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011). PPIs are not aimed to cure ailments or treat disorders, but rather help individuals enhance their well-being, or build their strengths to navigate more effectively in their daily lives. Although PPIs have been used to treat certain ailments (Fava et al., 2005), their impact can be seen in individuals with depression, where they induce an increase in positive emotions and helps to counter the physiological effect of negative affect (Fredrickson &

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Levenson, 1998; Tugade & Fredrickson, 2004) and prevent the occurrence of relapse (Fava and Ruini, 2003). Most PPIs then are used to address issues about the paucity of positive affect, meaning in life, and engagement (Forbes & Dahl, 2005; Seligman, Rashid, & Parks, 2006). Furthermore, PPIs have been proven effective with both, clinical and non-clinical samples (Stone and Parks, 2018).

PPIs can be divided into three distinct categories (Parks and Biswas-Diener, 2013). Definitions focusing on the content level, define PPIs in terms of interventions that focus around 'positive topics'. This conceptualization, however, encompasses any pleasant activity, without focusing on the outcome it generates after the activity. Variable level definitions focus on PPIs evoking 'positive mechanisms' (eg: 'Broaden-and-Build', Fredrickson, 2001), or producing 'positive outcomes' (eg: positive cognitions). The term positive here, however, is vague and difficult to operationalize. The third conceptualization focuses on PPIs as practices that promote wellness. The focus here is not to alleviate distress or fix dysfunction, but rather to promote well-being. Concerns around PPIs also revolve around the focus on the positive and moving away from the negative. Anxiety for example, which is related to negative emotions, can alert the individual to potential threats in the surroundings (Seligman and Csikszentmihalyi, 2000). Optimism on the other hand, which is associated with a predominance of positive emotions can result in the underappreciation of risk in situations (Peterson and Vaidya, 2003). Assignment of a singular valence to emotions is yet another challenge. The relationship between both positive and negative emotions is dialectical, and the terms by definition are co-dependent inherently (Ryff & Singer, 2003).

PPIs are based on the premise that activities included in the interventions should aim at inducing lasting happiness, and not just a momentary spike in the way people feel. Such interventions thus are designed to bring in long term changes that are more persistent than temporary fluctuations in mood. Although PPIs help people deal with negative feelings, the intent here is on the duration of the experience of positivity rather than the intensity. PPIs are effective in helping people cope with daily nuances and negative mood states (Seligman, Rashid, & Parks, 2006). Happiness can be influenced with the help of certain activities even though individuals have a "happiness set-point", which is a baseline level of happiness each individual can bounce back to despite external circumstances (Lyubomirsky, Sheldon and Schkade, 2005). Although this point is determined genetically, an individual's behaviour is an important determinant that affects happiness. Modification of this behaviour then is the aim of PPIs and determines their effectiveness.

Happiness has been reported to be both, a cause as well as a consequence of desirable outcomes in life, making it an important construct to tap (Lyubomirsky, King, & Diener, 2005). Testing the effectiveness of PPIs essentially is an attempt to see whether individuals revert to their baseline happiness level, or would they experience a higher level of lasting happiness because of the activities. Sheldon and Lyubomirsky (2012) proposed the 'Hedonic Adaptation Prevention Model' that explains how the issue of hedonic adaptation, which is a process allowing people to adapt to a stimulus and thereby return to baseline happiness/emotional level that can be addressed to enhance happiness and well-being in the long run. They talk about preventing adaptation via two processes. The first emphasizes the significance of appreciating the circumstantial changes happening in one's life, which people start taking for granted. The second pertains to practising the activities one has learnt so that mundane experiences can be seen in a new light when they occur every day. For instance, cherishing the time spent with a loved one. Hedonic adaptation is easier to avoid for some and very problematic for others. The 'hedonic treadmill' or emotional adaption (Diener, Lucas, & Scollon, 2006) results in a tendency to take pleasurable experiences for granted (Lyubomirsky, Sheldon, & Schkade, 2005). Individual differences and personality traits play a supreme role in determining an individual's ability to adapt to different life circumstances (Boyce and Wood, 2011). Harbouring realistic expectations rather than hoping for a flood of positivity too, is paramount. Psychological well-being is not only considered as the absence of ailments, but rather the presence of positive affect or resources and subjective well-being (Diener, 1984). It includes components of both, hedonic and eudemonic well-being (Ryan & Deci, 2001; Ryff, 1989).

The working of PPIs can be understood through Fredrickson's "Broaden-and-build" theory of emotions (Fredrickson, 1998, 2001). It states that an increase in positive emotions can momentarily enhance or broaden attention, cognition as well as behaviour that enable individuals to develop or build personal resources gradually (Cohn & Fredrickson, 2009; Fredrickson, 1998). This broadened awareness brought about by the PPIs then expands the thought-action repertoires that increase the chance of including the intervention activities into daily life routines. Further, as individuals build new resources to help them cope, or learn to capitalize on opportunities, the propensity to experience positive emotions increases, thereby making future changes easier and increasing their probability (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009; Fredrickson & Joiner, 2002). The "Broaden and Build Theory" has been reported to enhance not only positive affect, but also improve social relationships and health (Lyubomirsky, King and Diener, 2005).

Intervention Model

Developing an appropriate intervention model must take into account certain considerations. A plethora of activities must be included in the interventions rather than practising a single activity for a long duration and infuse new elements into such activities for more effectiveness (Parks et al., 2012). Research has shown that multiple areas or constructs tapped via different kinds of interventions are more engaging (Fordyce 1977, 1983; Seligman et al., 2005). Individual differences and personality traits play a supreme role in determining an individual's ability to adapt to different life circumstances (Boyce and Wood, 2011). Sin and Lyubomirsky (2009) found that PPIs administered individually as compared to groups have been reported to result in more effectiveness. However, group PPIs are much more effective than self-administered PPIs. Longer PPIs were reported as resulting in a better impact since the

duration of the intervention models gives time to the participants to transform the activities into habits, thus inculcating them into their lives. The prolonged practice of PPIs enhances well-being more effectively (Lyubomirsky et al., 2008; Seligman et al., 2005).

PPIs encompass the constructs like savoring, optimism, gratitude, active-constructive responding, etc. that are aimed to enhance well-being (Parks and Schueller, 2014). Sin and Lyubomirsky (2009) defined PPIs as being focused on increasing positive experiences rather than decreasing negativity. These activities, however, need to be based on theoretical conceptualizations of the constructs in the picture (Bolier et al., 2013). These activities then should address positive psychology constructs with a substantial body of evidence to support its effectiveness (Parks and Biswas-Diener, 2013). Since many of the interventions are still being tested, it is safe to say that research of PPIs is still in its nascent stages.

Individuals are motivated to generate positive emotions in life. This can be done through gratitude and savoring (Emmons & McCullough, 2003; Sheldon & Lyubomirsky, 2006), practising kindness (Tkach & Lyubomirsky, 2006) or even cognitive reframing (Seligman, Rashid, & Parks, 2006; Seligman, Steen, Park, & Peterson, 2005). Not only do PPIs enhance positive affect, but also reduce symptoms of illness (Fredrickson et al., 2008) and enhance physical health (Emmons & McCullough, 2003). They enhance psychological health (Fredrickson & Joiner, 2002), coping (Moskowitz, Folkman, & Acree, 2003), as well as strengthen interpersonal relations (Waugh & Fredrickson, 2006).

Parks and Layous (2016) divided PPIs into categories that focus on strength, savouring, gratitude, empathy, kindness, meaning and optimism.

Savoring

Savoring refers to focusing attention on a specific experience, and lengthening the experience of pleasure derived from that activity (Peterson, 2006). Activities focused on savoring encourage individuals to deliberately focus their attention on holistically experiencing what they're going through. It is an intentional process of taking in all components of an experience (Kabat-Zinn, 2009). This process can involve focusing on the meaning of a particular experience, noting it down, using humour while undergoing the experience, being aware of the counterfactuals, or even doing it in the presence of others (Bryant and Veroff, 2007). Savoring interventions can be divided into two categories (Schueller and Parks, 2014). The first involves teaching the principles of savoring to the participants and asking them to reflect on a pleasurable experience for a few minutes each day. Schueller (2010) conducted a study wherein participants were asked to savour all the aspects of an experience or object, using as many senses as possible and noticed an increase in positive affect. The second category of interventions, on the other hand, involves concentrating on a particular skill or an activity that the participants must indulge in. In a study involving "mindful photography", Kuntz (2012) asked participants to click pictures that would have a significant meaning for them for at least 15 minutes for two weeks. These participants then reported a higher positive affect. Savoring can be practised for something as mundane as the food one eats, to more complex experiences such as emotional experiences and memory (Bryant, Smart and King, 2005). Practising savouring has been shown to enhance life satisfaction and happiness, and decrease the propensity to experience depression (Bryant, 2003).

Gratitude

Gratitude refers to feeling grateful towards a certain experience, object or person that results in positive feelings (Parks et al., 2013). Gratitude has been considered as a valuable trait (Dumas et al., 2002). McCullough et al. (2001) defined gratitude in terms of moral affect due to the fact that it is motivated by concern for an individual's well-being. PPIs involving gratitude are focused on both reflecting upon past experiences as well as activities to enhance the feeling of gratitude. Gratitude interventions have focused on both, describing an event one is grateful for or even just naming an event one was grateful for (Emmons & McCullough, 2003; Seligman, Steen, Park, & Peterson, 2005). Emmons and McCullough (2003) encouraged participants to enhance gratitude through reflection, ie. keeping a journal for penning down all things they were grateful for via self-reflection. Gratitude interventions have been widely effective in enhancing long term well-being. These enhance well-being through increasing positive emotions, reducing depressive symptoms and improving health in individuals (Wood, Froh, & Geraghty, 2010). Seligman (2002) reported that another component of gratitude that could be tapped was expressing gratitude. Through the concept of a "gratitude letter", he portrayed how expressing gratitude to a person in significant depth, done through the medium of a written letter enhance gratitude. The stronger impact is reported via a written letter (Boehm, Lyubomirsky, & Sheldon, 2011; Schueller, 2012). Long term effectiveness of gratitude interventions can be ensured by bringing in variations to avoid hedonic adaptations. Gratitude interventions encompassing activities like *Three Good Things* and *Gratitude Visit* along with those intended to help participants identify and enhance their character strengths have been successful in enhancing well-being (Khanna and Singh, 2005).

Kindness

Acts of kindness towards others are not only benevolent, but also a quintessential trait of happy people (Aknin, Dunn, & Norton, 2012). Kindness is defined as any behaviour that is motivated by a feeling of compassion, acting on which the behaviour becomes an act of kindness (Long, 1997). It is a character strength that shows the proclivity to be good to others, to treat them with compassion and indulge in good deed (Peterson & Seligman, 2004). Pro-social spending, ie. spending money on others is a common kindness intervention used by many, which has shown to enhance well-being (Aknin, Dunn, & Norton, 2008). The focus here is not to indulge in extravagance, but rather doing little things like buying somebody in need a meal, or as simple as grabbing a coffee for a fellow colleague. Non-monetary activities involving kindness too, are effective in enhancing happiness (Lyubomirsky, Tkach, & Sheldon, 2004). It was found that indulging in at least 5 acts of kindness in a day

was more effective in enhancing happiness and well-being, as compared to performing one act of kindness per day for five days. The reason for this can be attributed to the fact that individuals usually perform acts of kindness in some way or another as a part of their daily routines. Therefore, noticing that they are consciously indulging in something such as this happens better when a significant number of kindness acts are made during a single day.

Empathy

Empathy by definition refers to understanding an individual's plight from their viewpoint as if walking in their shoes. PPIs to enhance empathy focus on strengthening social connections by improving relationships, since social relationships are essential to experience happiness (Diener & Seligman, 2002; Peterson, 2006). Loving-kindness meditation is a prominent activity being practised by many to enhance empathy. It involves creating positive emotions and feelings towards an individual or even oneself and has shown to greatly enhance life satisfaction and promote positive emotions and as well as behaviours (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008). Cohn and Fredrickson (2010) conducted a 15-month follow-up post PPIs involving loving-kindness meditation and reported that individuals who practised the interventions even after the sessions reported more positive emotions than those who either stopped practising or did not receive the intervention at all. PPIs focused on enhancing empathy can also work through increasing the overlap of self and other that exists (Davis et al., 2004). By trying to see things from another person's perspective, one may be able to truly understand their feelings in a closer manner (Hodges, Clark, & Myers, 2011). Social bonds are stronger among people who experience a strong self-other overlap with an individual (Galinsky, Ku, & Wang, 2005). Such individuals are better able to understand others in a more nuanced manner (Waugh & Fredrickson, 2006). PPIs that focus on empathy have also proven effective in promoting forgiveness (McCullough, Root & Cohen, 2006).

Optimism

To think favourably about one's future outcomes makes the ambiguity about the future easier to bear. PPIs focusing on optimism often centre on participants writing or thinking about their best possible future for a few minutes, which enhances well-being (King, 2001). Seligman, Rashid and Parks (2006) used the activity of "Life Summary", wherein participants write a summary of their lives, the way they would want it to be portrayed in a biography. They are then, asked to reflect and examine how they spend their time every day, to see if they would want to make any changes to their present routines to work towards their ideal life. However, since these activities are difficult to practice frequently, PPIs that ask participants to write about their "best possible selves" and to reflect on it after two weeks regularly are beneficial (Sheldon and Lyubomirsky, 2006).

Character Strengths

The recognitions and thereby appropriate usage of one's character strengths not only enhances an individual's well-being but also results in better adaptation to everyday problems (Parks & Biswas-Diener, 2013; Seligman et al., 2005). One of the possible downsides to this, however, is that people could be rigid in their use of strengths (Biswas-Diener, Kashdan, & Minhas, 2011). The development of strengths rather than only identification is a helpful technique to counter this rigidness (Louis, 2011). The study of character strengths and virtues (Peterson and Seligman, 2004) has been vital in the development and use of PPIs. Strengths are seen in terms of personality traits. Interventions aimed at enhancing character strengths are an effective buffer against depression and promote happiness (Seligman et al., 2005).

Meaning in Life

Finding meaning in life helps individuals to engage in actions towards achieving them more effectively. Meaning in life is a predictor of life satisfaction as well as happiness (Steger, Oishi, & Kashdan, 2009). PPIs to enhance this construct include setting meaningful goals (Linley, Nielson, Gillett, & Biswas-Diener, 2010), reflecting on one's profession (Grant, 2008). Writing about the positive outcomes of a negative event is an effective way to indulge in meaning-making (Folkman & Moskowitz, 2000).

Positive Psychology Interventions in India

Research pertaining to PPIs in India have been of two types, the first type focuses on replicating western PPIs to test their effectiveness in an Indian sample (eg: Khanna and Singh 2005); the second have focused on integrating native Indian techniques of yoga, meditation, and insights from the ancient Indian scriptures with the existing PPIs, or testing the effectiveness of native Indian techniques to enhance well-being (eg: Dabas and Singh, 2018). Positive psychology is not completely distant from the Indian notion of well-being. Seligman's PERMA model (2011) for instance, can be compared to the notion of *Purusharth* laid down in the *Mahabharata* and the *Upanishadic* texts. Whereas Seligman talks about the pre-eminence of engagement, meaning in life, and flourishing for instance, the Hindu ideology of an individual's purpose in life is to achieve four primary aims, called the *Purusharthas.* These include *kama* (pleasure), *artha* (wealth), *dharma* (duty/righteousness) and *moksha* (liberation). The *Purusharths* lay down a path that must be followed by all human beings in order to live a fulfilling life. Following *Kama, Artha, Dharama* is the ultimate route to *Moksha*, which is the ultimate goal of humankind according to the Hindu scriptures. Many principles laid down in the *Bhagwat Gita* stress the importance of how wisdom can be taught, and learnt thereby implying the importance of inculcating such concepts into the intervention module for enhancing well-being in an Indian sample (Dilip, Jests, & Vahia, 2014). The *guna* theory puts forth a distinction between *sattva, rajas* and *tamas*, and the balance between the three. An individual is said to function appropriately when there is predominance of *sattva* in the *Buddhi*, thereby resulting in balance (Rao, Paranjpe and Dalal, 2008). According to the theory, one must learn to balance among the three forces in order to function effectively, since only then is the *buddhi* capable of reflecting pure consciousness (Rao and Paranjpe, 2016). This state of pure consciousness can be understood as that wherein humans realize their oneness with the *Atman/Brahman;* that their selves are one with a greater being.

Seligman, Steen, Park & Peterson (2005b) mention how research in the field of positive psychology is intended to enhance positive affect, rather than replacing suffering and disorder, thereby drawing a parallel between the Eastern notion of the *gunas* with the western conceptualization of Positive Psychology. Rao (2014) wrote about the need for an integrative perspective emerging out of Indian psychology and positive psychology. Similarities and dissimilarities between the two have also been discussed in detail to fill the gaps between the current models (Dalal, 2014). The notion of happiness laid down in the *Vedas* is an important area of focus, since it talks about the path of righteousness that humans must embark on, to live a fulfilling life (Banavathy & Choudry, 2014). Cultural integration has been an important factor pertaining to research in India, due to the vast diversity in the population. PPIs should not be any different in this regard, and must showcase an amalgamation of both perspectives to enhance well-being.

Research on positive psychology is still gaining strength in the Indian subcontinent. Interventions to enhance well-being in India have included the practice of yoga, meditation and other indigenous techniques. A plethora of research points to the benefits of these practices in enhancing well-being and happiness (Danish, 2010; Salagame, 2014), which demands further research.

PPI Interventions: Concerns and Challenges

Research in the discipline of psychology has been hugely centred on the west (Berry, 2013; Jahoda, 2016). Cross-cultural research too is published more by the west than other parts of the world (Allik, 2013) which is not completely representative of a wider population. Applied mental research has for decades, focused on pathology instead of positive psychological health (Seligman & Csikszentmihalyi, 2000). The attention to how people "should" go on to live their lives had been on the forefront, rather than understanding the costs and benefits involved with the lifestyles. PPI interventions differed in the extent to which they make a difference in an individual's life, concerning the modality it is presented with the impact it has on an individual, and the expectation of the impact that the individual harbours, to name a few.

Speaking of motivation, people may opt for self-help interventions or even enrol in workshops, but maintaining a stable level of motivation throughout the intervention is challenging. The dropout rate of participants enrolled in internet-based interventions is extremely high, even before the first assignment is given to them (Christensen, Griffiths, Groves, & Korten, 2006). Engagement thus is an essential component that has to be carefully kept into consideration while designing a PPI. Even the best of activities can go to waste if the individuals who are supposed to do them have lost interest in the program or intervention. A challenge posited by group interventions is that of the person-activity fit. Each individual benefits from a particular kind of PPI, and to administer the same intervention to two very distinct individuals then, may not be fruitful. Parks et al. (2012) reported that individuals seeking to enhance their happiness can be divided into two groups; those who are fairly happy and those whose happiness levels are closer to that of clinical depression. Clubbing both these groups to administer PPIs hence, may be ineffective due to the variation in the participants' level of happiness rather than their motive. Apart from this, the personality differences (Senf and Liau, 2013), motivation level (Lyubomirsky et al., 2011), as well as preferences for certain kinds of activities (Schueller, 2010), impact the effectiveness of PPIs.

Each individual ventures into a PPI workshop with different expectations. While some expect miraculous changes, others might simply expect to feel a little better than they do. The benefit derived from the interventions hence depends on the extent to which an individual believes it would succeed. For example, the extent to which an individual values happiness determines their success with a happiness intervention. Those who had positive views about happiness reported greater improvement (Parks and Szanto, 2013; Sheldon et al., 2010). The question about whether valuing happiness increases the propensity to experience happiness, presents yet another paradox. Research on how people who valued happiness more, displayed lesser happiness, has also been reported (Mauss, Tamir, Anderson and Savino, 2011).

The willingness to attaining a goal, therefore, along with the right intervention impacts the success of the intervention. Many of the PPIs in administered today have been developed and tested by Western researchers. This is extremely important here because cultural considerations impact the effectiveness of PPIs (Sin & Lyubomirsky, 2009). The conceptualizations of constructs like happiness, for example, vary in different cultures. Whereas certain cultures consider happiness to be within the control of the individual, others attribute it to luck or chance (Oishi, Grahan, Kesebir, & Galinha, 2013). Some cultures also display a certain fear of happiness, ie. the fear that experiencing happiness will result in a negative event, later on, to balance out the happiness (Joshanloo, 2013; Lyubomirsky, 2000). Boehm, Lyubomirsky and Sheldon (2011) compared the effectiveness of PPIs in Anglo-American and Asian-American groups and reported that the latter achieved better results from the PPIs irrespective of the activities but the former showed a greater propensity to experience gratitude than optimism. Participants from individualistic cultures who value happiness as a highly important virtue have been reported to benefit more than participants from collectivist cultures (Boehm et al., 2011). Since collectivist cultures foster the importance of close ties, such participants have reported greater well-being when the PPIs administered were other-focused (kindness, gratitude) as compared to self-focused (reflecting and enhancing personal strengths).

Although an integration of Eastern and Western perspectives is important to establish a model of PPIs applicable to the Indian sample, it is also imperative to adapt the western models appropriately, so as to suit the needs of the Indian population. The idea of utilizing the knowledge of the *Vedas* and *Upanishads* seems absolutely apposite, but is a strenuous task. Ancient Indian literature is highly interpretive, and must be comprehended with care. It is crucial that anybody trying to develop an intervention grounded in this literature gains appropriate knowledge of

the texts. Patanjali's *Yoga Sutra* is an undisputed text underlining the process to attain *moksha* or liberation, but the practice of the *asanas* or meditative practices must be done with utmost care. Western models have heavily relied on grounding the PPIs in research. With the ancient Indian practices however, research is just one part of the process. Primary focus must be on understanding the practices, their origin, the rationale behind them, correct application of each, and then testing the models on an Indian sample in order to devise and test a new model.

Parallel to this however, adapting western theories modified to suit an Indian sample must also be undertaken in order to make use of the extensive research done by the pioneers of positive psychology like Seligman, Diener, Worthington, McCullough etc. Although many PPIs have been laid down for application on secular samples, but the language, terminology and the ideology behind them is so westernized, that an Indian sample may find it hard to relate to such concepts. Research in the field of positive psychology must move forward in this direction, to fill in the gaps on one hand, and on the other, devise indigenous practices to enhance well-being.

CONCLUSION

Positive Psychology has transformed as a discipline ever since its conception in the late 1990s. The pragmatic shift from the focus solely on clinical ailments and a potential treatment plan, towards a good life has been monumental. PPIs have focused on implications for a good life, through self-awareness activities encompassing the components of gratitude, kindness, optimism and empathy to name a few. Helping people in their quest to find meaning in life or to help them identify and use their character strengths effectively has brought about positive changes in overall well-being and happiness. Activities as simple as journaling or filling out a checklist to know where one's signature strengths lay are not only transformative, but much more. PPIs hold the key to uncovering happiness and well-being in ways that perhaps, have still not been explored which would undoubtedly contribute towards a good life. The study of PPIs however, is more nuanced than one could fathom. From the time duration, to the nature and even the number of activities, and their impact on different groups needs deeper attention.

Very few studies have been conducted in the Indian context assessing the effectiveness of PPIs, which points towards a growing need to understand their implications and the changes that need to be made to make them more effective. Since most of the interventions are developed by and tested on western samples, understanding the implications of using and administering them as well as the possible drawbacks with the same, are quintessential. Developing a PPI model for the Indian sample hence is important keeping in mind the growing mental health concerns engulfing individuals, and especially the youth. The scope of positive psychology extends from research into application in day-to-day life. There is a need to inculcate the findings from the aforementioned in such a manner that constructs like optimism, happiness and well-being benefit the masses and not just samples who receive PPIs. The social responsibility attached to the study of positive psychology must be taken into account which should aid in the development and transformation of society for the better.

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Review Paper

Applied Behavior Analysis: There's A Lot To It!

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ABSTRACT

Applied Behaviour Analysis (ABA), a scientific approach to understanding human actions, is based on principles of learning by the mediation of antecedents and consequences to establish or enhance socially important behaviors. In recent times, this approach has gained prominence, albeit erroneously, as the panacea only for the treatment of Autism. This rapid scoping review attempts to outline the meaning, types, history, scope for application, prerequisites for training and certification, problems, issues, challenges, and misconceptions about ABA in a simplified timely manner.

Keywords: *Antecedents, Consequences, Behaviour Therapy, Neurodiversity, Behaviourism*

INTRODUCTION

Autism and applied behavior analysis (ABA) is spoken as though they are sides to the same coin in common parlance. This association has been more perhaps in the past decade.

ABA comes from the context of the domain of psychology. Psychology is the study of mind and behavior (American Psychological Association, 2015). The study of behavior as a scientific domain became established with the philosophy of behaviorism. Behaviour is defined as units of observable-measurable actions. This science of behavior can be classified into two broad groups: the experimental analysis of behavior and the ABA. While the former is a basic formal research branch, the latter is considered the technology for improving behavior (Cooper et al., 2014).

This paper attempts to highlight and understand the origin and practice of this technology---ABA. The authors hope to provide an exploratory groundwork for the psychologists and highlight issues to raise research questions in our Indian settings.

What is ABA?

ABA, a.k.a. as behavioral engineering, is concerned with improving and understanding human behavior (Cooper et al., 2014). It is confused and contaminated with related but different phrases like "Clinical Behaviour Analysis," "Behaviour Therapy," and "Behaviour Modification." It is not the same as behavior therapy or behavior modification, which are based on the research of ABA. Nevertheless, the terms are used interchangeably (Miltenberger, 2016). Behavior therapy started known for many clinical disorders, while ABA became reputed in mainly developmental disabilities (O'Donohue & Fryling, 2007). The focus of ABA is on socially relevant behaviors. ABA interventions use operant conditioning techniques. The target of ABA is on antecedents (what happens before) and consequences (what happens after) the occurrence of an observable and measurable action (called behavior). The aspects of cognition such as beliefs, perceptions, thoughts, or expectations are excluded.

Origin and History

What began in the early 1900s as "Sensory Psychology" of Helmholtz, Weber, and Fechner; and later as the study of structure-working of sense organs; or still later, about the states of consciousness, images, and mental processes by Wilhelm Wundt and William James; or clinically by Sigmund Freud; or through experiments by E.L. Thorndike, gave rise to behaviorism as a school of thought in psychology. In short, ABA owes its origins to contributions from J.B. Watson, I.P. Pavlov, and E.B. Skinner. The studies from animal experiments on E.L. Thorndike's cats, E. Tolanan's rats, E.B. Skinner's mice, I.P. Pavlov's dogs, A. Bandura's apes, and Harlow's monkeys must be acknowledged. The assertion by E.B. Skinner: "Give me a child, and I'll shape him into anything" boosted the practice of behaviorism. The operant conditioning to move an arm of a vegetative 18-year inmate with feeble-mindedness using a sugar-milk solution as the reinforcing stimulus added to the credibility of these attempts (Fuller, 1949). Another success in changing undesirable ward behaviors of in-patients with mental illness or intellectual disability using a combination of operant techniques by psychiatric nurses added credibility to these practices (Ayllon & Michael, 1959).

A formal beginning of ABA occurred with the Journal of Applied Behavior Analysis (JABA) in 1968 in the USA. The standard descriptions, defining dimensions, and scope of practice for ABA were outlined by the founding fathers of the new discipline (Baer, Wolf & Risley, 1968). Among other things, the study of observable-measurable actions, replication of operative procedures and practices, scientific approach, practical outcomes, lasting interventional changes, transparency, visibility, and accountability was emphasized in the 1970s (Hayes & Bissett, 2000; Michaels & Green, 1978; Wolf, 1978; Goldiamond, 1974).

Thus, a formal science of behavior came into emergence, which sought to address the 'problems of demonstrable social importance for the benefits of the human condition' (JABA, 1968).

Applications of ABA

As mentioned in the masthead of the JABA, ABA is used in many situations which benefit human conditions. It is used in medicine, criminology, education, industrial safety, business, and rehabilitation and across disciplines like special education, mental health rehabilitation, clinical

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psychology, and human business practices. ABA has been tried on different diagnostic conditions within the clinical practice of psychological treatments of learning disabilities, conduct disorders, intellectual disabilities, autism, attention deficit (hyperactivity) disorders, obsessive-compulsive disorders, borderline personality disorders, post-traumatic stress disorders, and neurodevelopmental disorders. ABA practices are also used to treat smoking, weight loss, or reduce accidents in factory settings. Nevertheless, clinical applications for treating symptoms or conditions like anxiety, depression, or hearing voices are less addressed.

Clinical Behavior Analysis (or third-generation behavior therapy), as it is also called, is a movement within the history of behavior therapy requiring the clinical application of ABA. They include Acceptance and Commitment Therapy (ACT), Behavioral Medicine, Community Reinforcement Approach and Family Training (CRAFT), Functional Analytic Behavior Therapy (FABT), Integrative Behavior Couples Therapy (IBCT), and Behavioral Activation (BA) as applied to mental health and other health difficulties (da Silva et al. 2020; Dougher, 2000; Kohlenberg et al. 2002; O'Donohue & Fryling, 2007; Plumb et al., 2009; Woods, Miltenberger, & Carr, 2006).

What is ASD?

The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013) categorizes Autism as an "Autism Spectrum Disorder" (ASD). It is a cluster of symptoms. It is mainly characterized by a deficit in social communication and interaction and repetitive and odd behaviors. It has its onset in the early years of a child's development. It is one of the complex disorders under the umbrella of neurodevelopmental disorders, thereby giving rise to disability in most cases. Many controversies and themes surround this disorder (Venkatesan & Iyer, in press).

Traditionally, disabilities are viewed through different paradigms. The layperson approach called the "**magico-religious model**" views disability as the curse of supernatural forces for one's misdeeds in previous births. The "**medical model**" views disability as primarily a biological or psychological problem within the affected person (Miller, Vandome & Mc Brewster, 2010). Autism, for example, is viewed as something an individual has, much like someone having cancer. A cancer patient is not described as "cancerous" because cancer is considered an unwanted addition to the person rather than part of him.

Similarly, by saying someone "has autism," the implication is that Autism is an add-on, and a problematic one, rather than being regarded as merely a different way of being. The "**rights-based social model**" of disability highlights how attitudes, practices, and structures contribute to the condition (Lawson & Beckett, 2021). For example, workplace design may be disabling to heightened sensory sensitivity. There is growing momentum to turn towards the "**neurodiversity model**" than the "**pathology paradigm**" when conceptualizing Autism. Viewing disabilities as differences rather than dysfunction raises a host of opposition against therapies, including the ABA (Breen & Forwell, 2021; Chapman, 2019; Shyman, 2016).

Types of ABA

ABA is overly formulaic. It is based on fixed principles and dogmas. Dr. O Ivar Lovaas, a pioneer of ABA treatment, noted how behaviors that are reinforced are retained or increase, while those not reinforced reduce and eventually disappear.

An early form of ABA called **Discrete Trial Training/Teaching (DTT)** was the work of Lovaas in the 1960s. It was highly structured and believed in breaking down each behavior into skills or small discrete components to be taught repetitively and precisely, in the same way, many times each earning a reward. The ideal recommended duration was 48 hours a week. Research has shown that it requires up to 600 hours of therapy to apply DTT progressively and secure effective results for most clients (Dart et al., 2017; Gilsenan, 2020; Lerman, Valentino & LeBlanc, 2016; Rabideau et al. 2018).

The **Early Intensive Behavioral Intervention (EIBI)** is applied for five years or younger children. The teaching occurs by a trained professional in a one-to-one environment with a therapist leading each session. Recent meta-analytic reviews on EIBI have found that evidence is inconclusive due to insufficient evidence, and there were little data on longer-term effects. All studies were at risk of bias across several domains. There was a lack of randomization or blinding of outcome assessors. Short-term results were visible (Rodgers et al., 2021). A distinction must be made between EIBI as a format of ABA programs and early interventions (not necessarily behaviorally-based) for children at risk, those with developmental delays, or those with autism symptoms at a young age. They come by various shades and titles, such as low-intensity home-based early intervention services (Ansari & Nikam, 2021; Nair et al., 2014; Desai & Mohite, 2011; Kaur et al. 2006; Srinivasan & Karlan, 1997).

A later approach called **Pivotal Response Treatment (PRT)** was developed by Laura Schreibman, Robert, and Lynn Koegel for older children. This was more child-driven than structured by the therapist. The focus was on the pivotal developmental functions in a natural environment than as contrived therapy undertaken "across the table, (with) formal, hands on the lap" as in the earlier DTT. The procedures were around what the child wanted to do than what the therapist wanted the child to do (Ona et al., 2020; Boudreau et al. 2015; Cadogan & McCrimmon, 2015; Hardan et al., 2015; Verschuur et al., 2015).

The **Early Start Denver Model (ESDM)** by Sally Rogers and Geraldine Dawson is another ABA approach with play-based activities. The dictum was: "If they can't learn the way we teach, we teach the way they learn." The focus is on very young children between one and four years old to help them get back toward behaviors and developmental patterns of neurotypical children, especially with learning communication and socializing (Fuller et al. 2020; Wang et al. 2020; Canoy & Boholano, 2015).

Verbal Behavioral Intervention (VBI) focuses on verbal skills more than nonverbal communication, cognition, and learning (Edmunds, Kover & Stone, 2019).

Functional Communication Training (FCT) is an intervention technique that mainly focuses on reducing problem behavior in children with disabilities. It comes from a differential reinforcement procedure where another reinforcer of "equivalence" was chosen which maintains the problem behavior (Durand & Moskowitz, 2015).

The **Picture Exchange Communication System (PECS)** is based on enhancing the communication of non-verbal children using pictures of everyday activities. This is an alternative method of teaching communication based on ABA (Bondy & Frost, 1998).

Training and Certification

The history of ABA is dotted with horror stories. For example, children were forced to endure punishments like "sticky hands," where their hands were stuck down with tacky glue as a form of punishment. Children with ADD/ADHD were forcibly wrapped in heavy weighted blankets (weighing between 5-30 pounds) as a form of deep pressure therapy to calm and self-regulate by preventing physical movements. Noise-sensitive children were thrown into situations or circumstances with unbearable din. In many instances, parents are kept outside while such techniques are practiced on the child within therapy rooms. When children throw a tantrum and turn aggressive, a "visual screen" is recommended for use till the child calms down. The visual screen can be a wool hat that blocks vision. These types of punishment can be risky and traumatic. These horror stories are seldom reported until adulthood (Fisher, Piazza & Roane, 2021; McGill & Robinson, 2021).

To monitor against such mishaps, stringent rules for training, certification, and licensure for practice were espoused. The practice of ABA involves formal training and certification from the Behavior Analyst Certification Board (BCAB). There are different types and levels of ABA Certification.

- BCBA (Board Certified Behavior Analyst): Must already have a Graduate Degree.
- BCaBA (Board Certified Assistant Behavior Analyst) is undergraduate-level certification.
- CAS (Certified Autism Specialist). Requires graduate with two years experience in the autism field.
- AC (Autism Certificate). This is a continuing education program.
- RBT (Registered Behavior Technician). Work under the above.

The courses are available from private to state-based institutions to bona fide centers of Autism within US and Canada. In the present pandemic situation, the basic level courses could be taken online, post which the application and certification procedure must be followed as outlined by the board. The cost of the courses is approximately a few hundred to thousand US dollars, depending on the course content and credits allotted by an institution.

Several challenges are associated with training and certification for professionals and parents opting for ABA. One, it is expensive. It costs around 120 USD per hourly session. If an average of ten hours per week is recommended, the cost can be alarming. Although each child is different, some children show improvements in only a few months. Since finding a highly trained therapist is difficult, the ABA team often has one senior board-certified therapist-assisted by lower qualified assistants to reduce the cost of interventions. Teaching parents the appropriate execution of ABA strategies for home training is another challenge.

Eliminating non-harmful adaptive behaviors like stimming, for example, is not required. A child indulges in stimming behaviors like hand flapping, tapping a desk, grunting, or shaking head as a typical way to release emotions. Although such behaviors are unusual, they may not be harmful to the child or others. Hence, they can be ignored. With the advent of COVID-19 (World Health Organization, 2020) requiring social distancing and following the corona etiquettes or protocols, virtual formats of ABA have emerged, resulting in job loss, insecurity, decreased productivity, and increased burnout, especially for remote workers and technician-delivered telehealth services (Jimenez-Gomez, Sawhney, & Albert, 2021; Pollard et al. 2021).

Even without the pandemic, ABA practice demands the therapist must do a lot of sitting, standing, squatting, kneeling on the floor for extended periods. And be available at the assigned job location, home, school, community, or just about anywhere. These challenges are particularly pertinent considering the BACB decision to limit certification to residents in the USA and Canada after 2022.

The per capita supply of certified ABA providers fell below the benchmark in 49 states and was higher in the Northeast than in other regions ($p<0.001$). New workforce policies are needed to increase the supply of certified ABA providers to meet the needs of youths with ASD. Further, future directions in training need to incorporate cross-cultural issues to accommodate the diversity of clinical populations that may require help. In recent years, increased demand for services has resulted in a dramatic increase of ABA practitioners from about 5000 in 2008 to over 18000 in 2015. However, the number of ABA practitioners who conducted research in academic settings or followed the rigorous methodology and experimental designs has not kept an equal pace. Research training for ABA practitioners is also low (Zhang & Cummings, 2020; Critchfield, 2015; Kelley et al., 2015; Shook & Favell, 2008; Moore & Shook, 2001).

Misconceptions about ABA

Some common myths, misconceptions, or misunderstandings on or about ABA held by parents, teachers, professionals, students, or others are a "cure" for Autism or that the therapy can turn children into robots. Another false notion is that all ABA programs are the same. There is an erroneous notion that ABA contains only drilling exercises and does not consider emotions. There was a time in the 1970s when behavior modification, a predecessor to ABA, was even equated in public opinion

with psychosurgery, brainwashing, sensory deprivation, drugs, and even torture (Trump et al. 2018; Bondy, 2012; Arntzen et al. 2010; Turkat & Feuerstein, 1978; Morrow & Gochros, 1970).

Criticism

ABA is considered evidence-based best practice treatment by the United States Surgeon General (National Institute of Mental Health, 1999) and American Psychological Association (2017). This means that the practice or procedures have passed scientific usefulness, quality, and effectiveness scientific tests. ABA is based on core ethical principles like benefitting others treating others with compassion, dignity, and respect. It requires practitioners to behave with integrity and competence.

The practice of ABA faces several criticisms. An early version of ABA used punishment and rewards. Punishment is no longer used in ABA. It is still alleged to be harsh on children since it is repetitive. Another criticism is ABA is too focused on eliminating behaviors instead of building skills. They target what children should be doing rather than what they should not be doing. They teach and force children to become like neurotypical children-if; there is one like that at all. Studies have shown that almost 86 percent of respondents exposed to ABA are likely to meet the criteria of PTSD than respondents not exposed to ABA.

To belie such growing negative image of ABA, a different delivery of behavior services known as **Positive Behavior Support** (PBS; Johnston et al., 2006) was set off as a new brand name, or even as the more superior one, for marketing the service delivery systems of behaviour change. PBS recognizes the rights of persons with disabilities, stresses the use of non-aversive behavior-management procedures, and argues against people being subjected to dehumanizing interventions that are neither ethical nor beneficial in the guise of ABA. PBS emphasizes lifestyle change, functional analysis, multicomponent interventions, manipulation of ecological and setting events, antecedent manipulations, teaching adaptive behavior, building environments with effective consequences, minimizing the use of punishers, believing in proactive programming and social validation, with a unique role for preserving the dignity of the recipients of interventions. An independent Journal of Positive Behavior Interventions was started in 1999. In due course of time, the success of PBS became a threat to ABA (Johnston et al. 2006).

Parents seeking ABA services are themselves grieving for not having a "normal" child. They are made to believe that challenging behaviors or tantrums are manipulative and not to be yielded. The use of time out is recommended for children unwilling to perform some tasks. Withholding the child's wants or trying to make them speak verbally, have eye contact, forced to sit still, or stop stimming are objects, or place limits and disallow their stimming or use of sensory supports like headphones, ear defenders, earplugs, sunglasses, tinted glasses, weighted blankets, compression vests is against individual rights.

The **neurodiversity narrative** believes that differences must be recognized, accepted, and celebrated. Caregivers must have different expectations. Emotional dysregulation needs support, not punishment. Augmentative and Alternative Communication (AAC), sign language, typing or writing, pointing, or pictures are alternatives. ABA forces children with Autism to hide sensory pain and increase their likelihood of PTSD and suicide. Say NO TO ABA is a movement that was started to warn against abuse, neglect, restraint, food, and sensory assault. ABA therapy did not ask for the child's consent to touch and share, compliance for doing something because it was taken for granted. Children were pressured to do something by threat, blackmail, or bribing (McGill, 2020).

The treatment for Autism through ABA has gained demand and popularity with facilities for medical reimbursement by many third-party insurance companies in the USA. This has also become the reason for its overuse by professionals and the public. This has come to such an extent that it is argued that there are pervasive undisclosed conflicts of interest (COIs) in ABA autism literature. COIs introduce bias into the research process and demonstrate positive effects for interventions that are not effective. A related study found that 84% of the reviewed articles published over one year on ABA autism intervention strategies had at least one author with COI-but were only disclosed in 2% of the studies (Bottema-Beutel & Crowley, 2021).

Further, ABA is alleged to promote prompt dependency. Prompts can be physical, verbal, visual, and even the caregiver's presence. Although the need for fading prompts and improving independence is acknowledged, a lifelong prompt dependency is reported by several studies as observed at all levels, including the so-called "high functioning" persons with Autism (Gorycki, Ruppel & Zane, 2020; Wilson et al., 2014).

ABA is not shown to be efficacious for the non-verbal autism population. Issues like the structure of the autistic brain, their overstimulation, the trajectory of child development, or the complex nature of human psychology are ignored in ABA research and practice (Sandoval-Norton, Shkedy, & Shkedy, 2021; Kupferstein, 2019).

Branding and social marketing of ABA is a growing phenomenon in the USA. Effective marketing and public relations of ABA were minimal in the initial days. If the 1987 publication of Dr. Lovaas's treatment effect was the first rhetoric of recovery from Autism, the 1993 publication by Catherine Maurice's autobiographical account of applying for Lovaas-style ABA intervention programs with her two young children was the second. The third watershed moment in contemporary Autism was in 2005, with the establishment of the organization Autism Speaks, which changed the face of autism rhetoric through its comprehensive deployment of corporate-style political strategy (Bailey & Burch, 2013; Broderick, 2011; Austin & Marshall, 2008; Allen et al. 1993).

CONCLUSION

ABA has been in discussion much in the west. This, therefore, is a rapid scoping review. In doing so, this exploration compiles available research evidence, raises research questions, identifies issues and biases, mentions ethical issues and challenges. ABA's issues, challenges, and applications will be discussed vis-a-vis ASD in Indian

settings. This paper intends to provide an intro to knowing the Indian scene on ABA.

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Book Review

Parents Beware of the Digital Demon, Malavika Kapur (2021), Vitasta, Ansari Road, New Delhi, 204 pp. ISBN9788194820031. Rs.450

Malavika Kapur's 'Digital Demon': A Thematic Review

[1]S. P. K. Jena

Malavika Kapur is one of those authors who has brought child mental health to the easy grasp of ordinary people. Her thought provoking narratives and style of literary presentation has set a new standard in contemporary writing on mental health. *Parents Beware of the Digital Demon* (Kapur, 2021) is one such writing.

Technology has always remained an object of wonder and suspicion as well. Excessive reliance on it has emerged as one of the issues challenging society, families, clinicians and researchers (Young, & Nabuco de Abreu, 2011). For instance, although Internet has become a part of our daily life as an information tool and there is unquestionable opportunities for social connectedness, economic betterment, self-learning, even freedom from shyness and paralyzing inhibitions, has now become a major source of addiction, affecting our personal and social lives in many ways (Abouaoude, 2011). In India the Indian Institutes of Technology have been restricting campus Internet use during night hours because of reports of suicides being linked to presumed antisocial behaviour that excessive Internet use promotes (Swaminath, 2008). In a study of school children Nalwa and Anand (2003) found two distinct groups: dependent and non-dependent user. The dependent group were found to delay their work to spend time online, loose sleep due to late-night logons, and feel life will be boring without Internet.

Kapur's present book speaks of the menace of digitization and its impact on children's mind. It begins with an excerpt from Roald Dahl, the British poet, novelist and one of the greatest storytellers for children. The excerpt provides a figurative description of the impact of digitization on the child's developing brain, killing his fantasies and imagination, making him dull and literally blind in viewing the reality of the world around him, who is too incapable of thinking, who can only see insensitively.

This was the apprehension of the poet in 1940's, when even television was a newcomer. Although the excerpt sounds too pessimistic, it sensitizes the readers about the worst possibilities. Endorsing this, the author explains Isaac Asimov's Three Laws of Robotics. She considers them to be as sacrosanct as the Oath of Hippocrates in practice of medicine. She also expresses her concern about the current trends of writing (and digital display) especially for children where aggression has become an increasingly visible entity, where an aggressor becomes the true hero attracting more empathy, than the suffering victim, who becomes a non-entity—and a misnomer. Aggression is depicted so well that a child's attention converges more on the former than on the later. She views this as the root cause of the 'bystander's effect' in our everyday life. People see, take photographs or video record a crime, even put on the website but do not act against the crime. They watch people dying in road accident or road rage, but do not call police or an ambulance nor take the victim to the hospital. This disturbing social pathology demonstrates the crumbling edifice of conscience in human society. However, she cautions against over generalization of these observations, perhaps because there are very many factors influencing people acting as thick-skinned idiots.

The present work has been largely focused on the impact of digitization on Indian children. The author suggests, basic understanding of human brain and development of mind is core to our understanding of children's development in other areas of functioning. Information Processing Theory is one of the best approaches to understanding both, the functioning of the brain and that of artificial intelligence. Sharing research evidence and her personal experience as a clinician, she suggests that the modern gadgets are prepared as per the needs of the adult brain, not for the developing brain the children. Therefore, this has undesirable effects. Child's brain fails to process many information.

The introductory chapter is more about the general issues of child development in Indian context. In subsequent chapters she used case vignettes to explain various childhood problems. In the section on *Screen Time Hazards and the Very Young*, she explores the reasons for gadget addiction in the age group of 0 to 4 years and explains that even the literate parents encourage this considering that early exposure of children can help them gaining better 'gadget skills' to have better 'control' over digital world, hence 'better adjusted' to the future world dominated by gadgets. While others approve this to ensure better 'safety' from infections from other children. This growing mindset is in sharp contrast with the philosophy of holistic development of children. Even mother's screen time engagement itself affects the young infants on her lap.

In order to illustrate this, she provides a case study, where a young nine-month old infant gets scared, trembles and becomes nauseous while the entire family watches TV, as he is helplessly exposed to the provocative and hostile contents of the movies. Other kids, less likely to look even at their loving mothers, than the television, as the gadget become substitutes for them, being more engaging. The author, alarms about this gadget addiction among children that is not only affecting language development and social development, but also leading to mental health problems. Even many linguists attribute the same worry to the new technology predicting the disappearance of languages and a decline in spoken and written standards.

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However, linguist David Crystal (2011) shares a diametrically opposite view, considering this worry as a product of popular misconception. Such worries are practically based on myths. Contrary to this, research studies reveal that at least textism (text messages full of abbreviations) does not erode children's ability to read and write. Interestingly, the more they used abbreviations, the higher they scored on tests of reading and vocabulary. Rather, those who were better at spelling and writing used more textism. There is nothing to be surprised about this, as children could not be good at texting if they had not already developed considerable literacy awareness. Crystal further advocates that Internet is a remarkable expansion of expressive option available in the print as well as broadcasting. The linguistic revolution that has happened in Internet through new varieties of communication such as e-mail, chat, texting, blogging, tweeting, instant messaging, and social networking has opened avenues for augmentative communication for the communication-deficient children. The author even advocates Internet in general and text messages in particular be introduced in the classrooms.

But what the Kapur has emphasized most is its impact on real world communication of emotions feelings, and attachments, not just written language, which has considerable impact on children's socialization no matter how intelligently they grow. She writes, now figuratively gadgets have become children's '*virtual nanies*'. In its sub-section '*Train Train Come Again*', she cites the case of her own grandchildren to explains how age of the children make a difference in identification and interpretation of subjects which are presented in the digital media. For instance, watching the same short film, the younger 5-years old child could only got captivated by 'the station bell ringing twice before the train entered the station', whereas the elder child could feel and appreciate the 'empathy' embedded in it. One needs emotional maturity to understand such finer emotions like empathy and even distinguish the contents that are healthy and unhealthy. This is crucial for understanding the differential impact of gadgets on children across ages.

The chapter on *Screen Time and Perilous Development* of children in the age group of 4 to 10 years, the author illustrates at least 7 cases of gadget addiction and related issue, such as sexuality. She suggests that free play can promote children's physical and mental wellbeing, and enhance their touch with reality, orient to their identities, and creativity. This is how they can combat with their excessive engagement with gadgets.

The chapter on *Nature, Needs in Adolescence of 11 years and above*, focused on 'generation gap'. She skillfully depicts, how confidentiality, self-esteem and guilt become the major concerns of adolescents and how fragile are they. She also explains how easily smaller things bruise their self-esteem, thus considered as a 'fragile trait'. Therefore, it is important to 'respect' the adolescent who are constantly trying for establishing their identities. Increasing pressure on studies and additional coaching make them still more fragile. In the backdrop of teacher-centric education, she prescribes activity-based programmes for them. Apart from excessive pressure on studies, many of them experience bullying-related mental health issues, and some exhibit use absenteeism as a defense against this. Therefore, she underlines the need for an inclusive approach to education and explains how home becomes just a 'house' for them for taking shelter, when it is devoid of parental warmth and care. This has become an increasing concern for the mental health professionals. Gadget fascination has spillover effect to other life situations, as they tend to show less attachment toward their parents.

The chapter on *Nature of the BEAST* cautions the parents about the misuse of the innocent videos of the pre-pubertal children's by unscrupulous playgroups. They use these as sexualized materials to attract pornographic viewers, even promoting pedophilia and kidnapping. Some even act as devil's advocate and blame the parents for the same. The toxic contents of the games like PUBG are reportedly linked with increasing cases of heart attacks, although this is yet to undergo an acid test of fact-finding research, careful case studies and psychological autopsies to find out the causes of death. Similarly, Internet of Things (IoT) and Artificial Intelligence (AI) are now changing the food habits of children who prefer commercially manufactured junk food than the mothers' home-cooked food. In fact, this is witnessed even for other domestic products in a globalized world, products where the idea of *swadeshi* takes a back seat. Even the old brands of televisions like Konark, UPTRON, KELTRON and others have disappeared in the race for globalization, multinational companies capturing Indian market. Perhaps this mindset has to be tackled at the early childhood itself. Children's and even adults' are not governed by 'all or none principle' on which determines functioning of the fundamental neuronal network. It lies in informed decision-making. Parents could act as key players in it. Twitter, Google, Facebook and even the Chinese Apps are affecting and changing our public mindscape. It needs research and analysis, which will guide the lawmakers to take informed decisions. However, our major challenge is not to eliminate them entirely but make controlled use of technology, and if possible providing a more versatile *desi* technology to replace them. The frames of mind have evolved so much across time that, the new generation sees very little distinction between *desi* and *videshi*, domestic and foreign. This 'discrimination failure' is one of the byproducts of globalization, even for the adults. Novelty, economy and convenience of use of a specific technology have attracted the young more than their long term-consequences. Now the relief is that products are multiple and the choices are many. Informed decision can help in (1) selecting a safer gadget and (2) regulate the use of the existing ones. Advice of a cyber psychologist or a clinical child psychologist would be of immense help. Kapur in fact, has explained how use of the marketing/psychological buzzwords like 'social' and emotional learning', 'mindfulness' and authentic learning have made the companies like *Tesla*, *Netflix* and other gaming software so popular. These programmes have, made these applications multibillion-dollar business, which sails smoothly in Indian market. Group games are now popular for their socializing element in them, as players can be easily connected from various geographical locations.

However, technologies confuse the parents. Games like '*Pokémon*' and '*Blue Whale*' are some of the examples. The latter has been banned for inducing children to commit

suicide. PUBG is reportedly leading to heart attack deaths in children, even murder of a parent preventing to play the game, but has not been banned due to technical reasons. The effects are varied. Therefore, technical manipulation of minds of the young is a major concern in recent times. Since these technologies act as double-edged weapons, require scientific research. In USA '*Truth About Tech*' was one such effort to study the effects of such technology on human behaviour. Kapur, draws a parallel between cyber addiction and substance use, which leads to dopamine release after its excessive use. Sudden taking away of the instrument or gaming device, have become cause of aggression, self-injury and even suicide, similar to the withdrawal effects in substance use. However, it is different in many ways (Koepp, 1998), use of videogames is more like automobile use. Hence, the preventive effort should be similar to control of rash driving. One cannot be entirely abstained from it but use it in controlled manner, by setting limits to it. Regarding use of the gadgets she has provided several guidelines and different places, based on the context. In order to examine the effects of these games, author scans through major studies, which are inconclusive, whether over use of these software has any negative intact. The findings were mixed. Correlation figures if any is considered as connected by may not be 'casually'. In fact, many of these studies are contradictory and most agree that moderate use of these technologies is not harmful for children. Now efforts are on to reduce the addictive elements in these gadgets. Low-tech schools are now popular among the literate and well-informed parents.

In the chapter on *Advertising: The Trojan Horse*, a considerable part of her discussion has converged on advertising, the body language depicted in them and the hidden messages they communicate to the young and old for purchasing certain products which they advertise. She has also provided some of the common strategies of advertisement and suggested the parents about the ways to limit advertisement viewing of children.

In her discourse on *Collusion between Technology Industry and Education* the author sensitizes about the education system in India. Although free computers are provided to children and aggressive effort is made for computerization in schools, largest screen time of children was spent on entertainment than on education. Digitization has poorly addressed to the issue if diversities in language and background of children. Much publicized augmented use of technology is hardly a reality. At least in the early stages of development, concepts can be learned much better through actual interaction with the real environment instead of the virtual ones. Apart from these core issues, unavailability of electricity, poor maintenance facility and e-wastage are some of the connected issues, which have been generally ignored. From this perspective, she comments, tech use in India is still a status symbol in education. Its cost is forced on the parents whereas the industry benefits most out of it. The magnification and replication function are still most prominent digitization rather than qualitative improvement in education. The recent experience of COVID-19 had enhanced use of computer in schools, colleges and universities in many folds with simultaneous complaints of Internet addiction, mental health issues of people who are overwhelmed by computer use. This has shattered the family life and scope for active learning. People still struggle with digital fatigue.

In the second part of the book, she provides some useful intervention strategies and guidelines for parents explaining their link with myelination of the neurons, which needs vigorous activities in the real world, with a caution for under stimulation as well as overstimulation, that can affect the developing brain. She has provided anecdotal accounts, case reports and outcome researches to explain the effects of intervention.

Below the age of 7, the author suggests the children's need for closer interaction with adults. This can be achieved through talking, making eye contact, reading, singing, story telling and most importantly playing. Acquisition of gadget skills, like tapping, clicking, swiping by 4 years of age create a potential for their early involvement with the virtual world and that overstimulation at this stage may even affect myelination of the neurons adversely. Through several case reports she explains the possibility of language impairment, in attentiveness, autistic-like features and other forms of developmental psychopathology. Children between 4 to 11 years get exposure to the school, where real time play activities is a crucial requirement for intellectual development. This is the period during which they develop pro-social behaviour, empathy and self-control. In school, gadgets play a very deleterious role, causing distraction from classroom teaching activities. At this stage, screen addiction used to be most prominent. Several cases studies were reported explaining the characteristic problems experienced at this age. The author suggests immersion in outdoor activities, spending time in the nature, adventurous games could be a remedy for these. Deaths due to taking selfies in dangerous situations, has become another prominent cause of death among youth. The tech rehabilitation centres in may be able to tackle the` problems gadget addiction.

There is not only a digital divide between rich and the poor communities, but also split of the minds of children. Those from lower socioeconomic status tend to have less number of computers and that rather saves their minds. Further, children for low socioeconomic may not benefit much from computers and smart phones. Computer-based learning interferes with self-motivation. The author reports about the Game Transformation Phenomena (GTP) in video gamers, while others experience conflict between the real and virtual world, leading to dissociative and psychotic states and even claims that gaming compromises development of verbal intelligence of children.

The global pandemic COVID 19 has enhanced the gadget addiction in many folds. Therefore, she cautions the parents to have a vigil on children's use of technology and advices them for 'regulated use' as a golden rule. Apart from acting as role models, they should enhance quality interaction and spend more time with their children. This is more so as loneliness is one of the causes of gadget addiction (Morahan-Martin, & Schumacher, 2003). There fore, she suggests them to follow the guidelines offered by various professional agencies for children's safety, to self-assess if the parents themselves are screen addicts must overcome

gadget addiction. The most important issue is to look into privacy and protection of their devices, encourage creativity, and watch out for cyber bullying. Kapur uses Dr. Doan's metaphor of technology using the five fingers of the hand for representation: thumb (positive benefits of technology e.g. speeding up reaction time, and eye-hand co-ordination, reflexes, attention to intricate aspects of the screen), index finger (communication skills), middle finger (social bonding), ring finger (empathy) and little finger (self control). She also uses her own metaphor for explaining the parents' role as 'Mahouts', who not only capture, tame and train elephants, but also transform them into faithful servants. Similar is the case of the technology, which is to be put into the use of the humans. At the end she shares some of her reflections, suggesting how to conduct parent sessions and has provides some of the sample objectives.

Given her expertise in child clinical psychology, the book provides a unique overview on the impact of technology on developing minds. This is an excellent text explores the effects of technology use in depth and provides valuable tips as to how to tackle its adverse impact.

India's first centre for dealing with technology addiction called Service for the Healthy Use of Technology (SHUT) was started in NIMHANS, Bengaluru. in 2014. It deals with craving, control and compulsion (3'C's). People are educated using motivation enhancement therapy, cognitive behaviour therapy, exercise therapy, roleplay and other methods of psychological intervention, says Manoj Kumar, Professor, Department of Clinical Psychology (Kumar, 2022) who conceptualized this. Besides clinics, the Institute tries to address to the problems in the schools and colleges and for parents to make them aware what constitutes unhealthy use of technology by their children (Travasso, 2014). However, a large population of young people is still beyond the reach of such institution-based services. Therefore, dissemination of information has become crucial. From this perspective, the present book is a major contribution to technology-human interface, therefore highly recommended text for the parents, students as well as mental health professionals working on technology addiction of children.

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Obituary

In Memory of Dr. Dhaneswar Sahoo

31 March 1950 -13 February 2022

[1]S. P. K. Jena

Dr. Dhaneswar Sahoo, one of the well-know Clinical Psychologists of the State of Odisha, and son of the Freedom Fighter, Late Shyam Sunder Sahoo, and Janaki Debi. Dr. Sahoo was born in Dimisar village of Nayagarh District, Odisha, did his schooling from Sarankul High School, Pre-university degree from S. C. S. College, Puri, B.A (Hon.) in Psychology at Ravenshaw College, Cuttack, M. A. Utkal University, Bhubaneswar. He joined as a Lecture at Ravenshaw College, Cuttack in 1975, but resigned from his government job to join M. Phil. in Medical and Social Psychology, at NIMHANS, Bangalore. Returning to the home state, he joined as Teacher Fellow at Centre of Advance Study (CAS) in Psychology, Utkal University, Bhubaneswar in 1981 and did his Ph. D. on Obsessive Compulsive Disorder, under the guidance of Prof. Saroj Kumar Mishra, and John Gillis, the Visiting Professor at CAS, Bhubaneswar. Being selected by the Orissa Public Service Commission (OPSC), he joined as a Lecturer of Psychology in Gangadhar Meher College, Sambalpur, thereafter he taught in several colleges of the State including Women's College Berhampur and finally at B. J. B. College, Bhubaneshwar, from where he retired as Senior Reader in Psychology. In Odisha, the teaching positions in Clinical Psychology was non-existent, like many other states of the country. Therefore, he kept on teaching in colleges. He was a teacher par excellence, remembered as a loving teacher and a clinician to the core, who revolutionized the field of clinical psychology by creating awareness about the discipline at the college level, providing clinical services to people suffering from mental illness, even in the college setting, conducting case studies and demonstrating the art of clinical testing to the students. He served as a representative of IACP of Eastern Zone for quite sometime as well and took lead in organizing National Social Services (NSS), and Blood donation Camps in many places encouraging young people to come forward to offer their services. Although, extremely active in social services, he was soft-spoken and very simple and affectionate person. After retirement, worked as a full-time Clinical Psychologist in a Mental Health Clinic: '*Mind*' in Bhubaneswar. This was the first Clinical Psychology, Clinic, which he ran it very well, providing specialized services to people with obsessive-compulsive disorders. He also served as Later, as a consultant and member of the advisory committee, he was instrumental in starting a Department of Clinical Psychology and M. Phil. programme in Clinical Psychology at S. C. B. Medical College, Cuttack the premier government medical institution, and the largest government hospital in the State.

His premature death has left a huge vacuum in clinical psychology. He will always be remembered as loving teacher who popularized Clinical Psychology in the Sate of Odisha and for his dedicated services to the people of the State.

I am thankful for the inputs from Prof. U. N. Dash and Dr. Jashobanta Mohapatra

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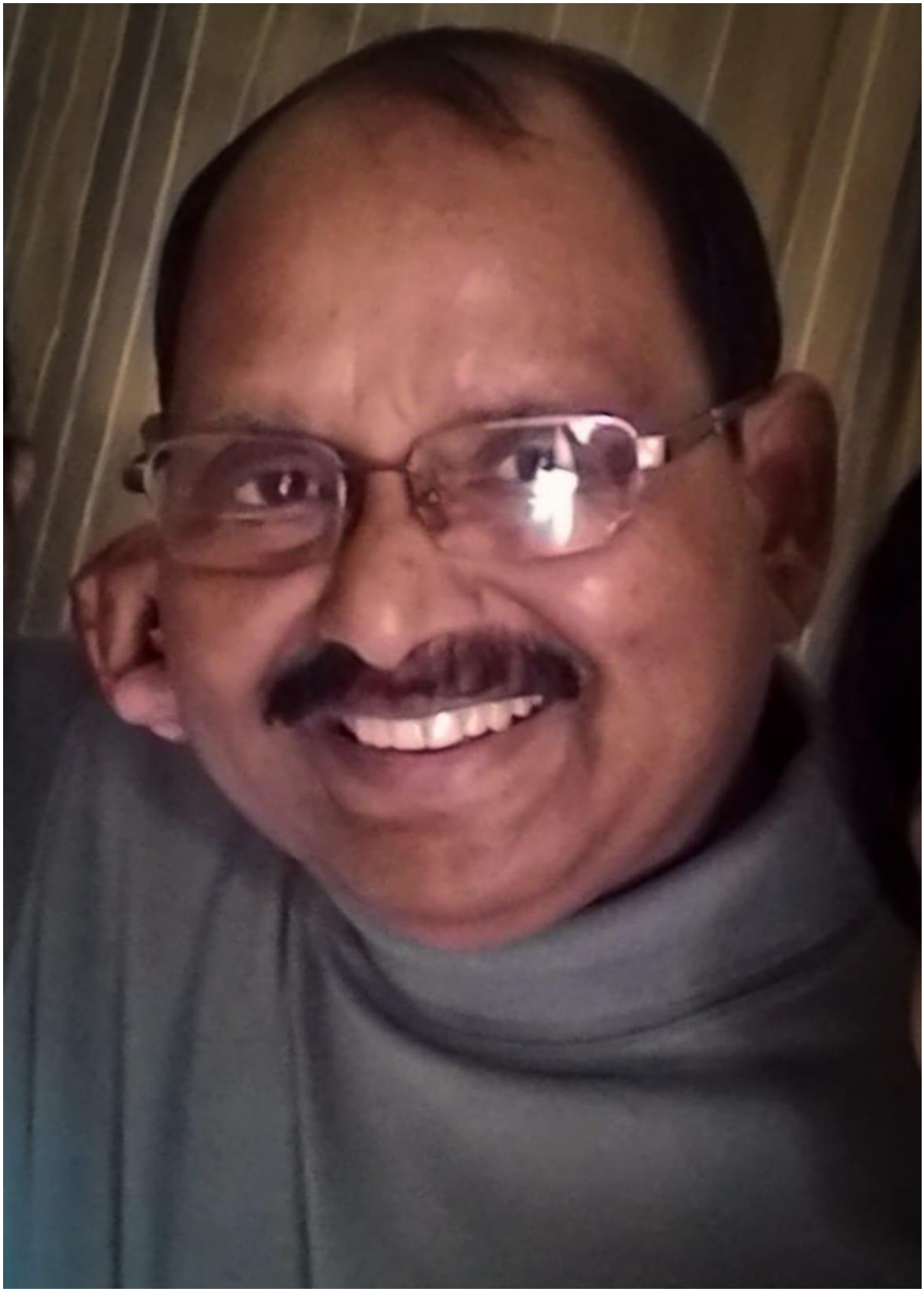

Dr. Dhaneswar Sahoo
(31 March 1950 -13 February 2022)

INDIAN JOURNAL OF CLINICAL PSYCHOLOGY

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More on Announcement, Theme, Sub-theme, Venue and Registration Details will be shared in the next issue.

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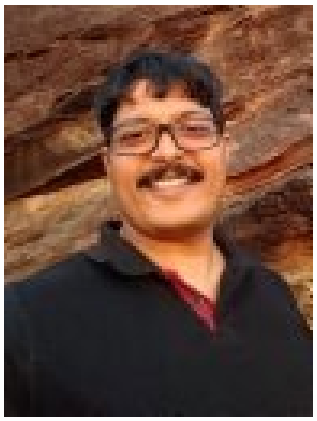

ACKNOWLEDGEMENT

Dr. Nitin Anand, our Associate Editor, extended all possible help with his competence and available resources in bringing out IJCP issues in the year 2020 & 2021. Both these years were highly under the impact of PANDEMIC. Further as per our determination, we were able to make IJCP a quarterly publication w.e.f. March 2021, successfully. Valuable contribution of Dr. Nitin in bringing out total 6 issues of IJCP (2020-2 issues and 2021-4 issues) in the most difficult days, when the whole world was facing the disaster of COVID 19; will always be remembered by the Editorial team and all the members of IACP.

Editorial team expresses heartfelt thanks to Dr. Nitin Anand on successful completion of his term as Associate Editor in the year 2021. Further we congratulate Dr. Nitin for his achievement; who has been promoted to the post of Additional Professor: Clinical Psychology.