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THE IMPACT OF PSYCHO NEUROBICS ON BODY AND MIND OF AN ADOLESCENT CHILD UNDER DEPRESSION AND ANXIETY

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Abstract

The WHO study (2009/10) reported that approximately one in five young people under the age of 18 experience some sort of developmental, emotional or behavioural problems, focusing on the mental health concerns of society in general and youth in particular. The issue needs significant attention from mental health professionals, behavioral scientists and policy makers, with an estimated 1.2 billion young people aged 10-19 years in the world. With this in mind, the present research aims to examine the efficacy of two forms of intervention strategies: psycho-neurobics and mindfulness meditation in Delhi-NCR, India, on the psychological well-being of high school students aged 15 to 17 years. Compared to the control group, the quasi-experimental design investigated the effect of 4 months of mindfulness training and psycho-neurobic training on pre-identified adolescents showing low psychological well-being. Variance analysis and Pearson correlation showed that both treatment groups reported substantial psychological well-being increases. However, in changing the course of various areas of psychological well-being, where psycho-neurobic therapy resulted in greater efficacy, there was a substantial difference. The research empirically shows psycho-neurobics as an important tool in the Indian subpopulation that can be incorporated with the school curriculum.

Keywords

Psycho-Neurotics, Mindfulness, Psychological Well-being, Adolescent, School-based Intervention

Introduction

The essence of difficulties and life challenges faced by adolescents are of far higher gradient than before, but they are given less support and intervention for their personal development (Pajares&Urdan, 2005; Suresh, Jayachander& Joshi, 2013). The growth trajectory of the next generation is subjected to an entirely different context due to the dual effects of traditional and modern values as well as practises (Yi, 2013). In the Indian sub-continent, home to the largest population of adolescents, complex economic, social, political, cultural and environmental contexts generate a wide range of challenges (UNICEF report card for children, 2012). In addition, disintegration of joint families and conventional social support structures (Vranda,2015), poverty and social stress (Kuruvilla & Jacob, 2007), social hierarchies (Jiloha, 2007) and conflict between parents

and children (Das, 2000), among others, are some risk factors in the life of Indian adolescents. In view of the fact that such a large population is at the threshold of suffering from mental illness, certain intervention methods demand urgent attention.

The National Research Council and Institute of Medicine Committee on the Prevention of Mental Illness and Substance Addiction among Children, Youth and Young Adults (2009) empirically proves that early intervention can prevent many of the mental, behavioural and psychological issues among children and adolescents. Schools have long been considered an optimal venue for 'frontline' providers by defining their naturalistic environment to discuss the effects of childhood exposure to stress and trauma (Burns et al. ,1995). Several school-based behavioural health reforms, such as 'MindMatters' (Rowling, 2007) and 'Resource Adolescent Program' (Shochet, Dadds, Holland, Whitefield, Harnett &Osgarby, 2001) in Australia,' Coping Power Program' (Lochman& Wells, 2002),' I Can Problem Solve' (Shure, 2001) and 'Good Behavior Game' (Embry, 2002) in the United States have demonstrated varying degrees of effectiveness in such universal and pre-indicated

In the case of the Indian sub-continent, similar programmes must be established that are responsive to conventional values and traditions concerning well-being and psychological well-being. Wellness is holistically interpreted in India in terms of a mixture of physical, mental, emotional and spiritual components (Rice, 2003). A number of factors such as unhealthy diet, contempt for gods, elders and teachers, supernatural powers such as ancestral spirit impacts, forest divinities, and evil eye are due to mental illnesses and psychological problems; breach of tabu; past life activities; defective body activity and humour imbalances (Balodhi,1999; Kapur, 1979; Prasadarao&Sudhir, 2001; Ramu& Venkataram,1985; Weiss, Sharma, Gaur, Sharma, Desai &Doongaji, 1986). According to Lichtenstein, Berger and Cheng (2017), before resorting to psychiatric care, 75 percent of patients use folk or religious healing. The Western study of mental illness has seldom taken into account cultural or contextual factors in its conceptualization, diagnosis and care, despite marked disparities between indigenous healing traditions and conventional psychology. (Berganza&Ruiperer,Mezzich,2001).

Critics claim that when traditional psychological intervention fail to take into account the holistic view of wellbeing, it may result in underutilization of resources and early termination of therapy (Juntunen& Morin, 2004). Research in the region also reveals that American Indian learners are under pressure to assimilate the dominant American culture while staying faithful to their own traditions (Werdel, 2010). In contrast to their European-American counterparts, Latino and African-American students were often hesitant to use university counselling facilities (Ford, 2008). Goforth (2007) suggests that the treatment of Aboriginals as a monolithic group in Canadian residential school systems and the neglect of their particular worldview have detrimental consequences. India's yoga practise, which is increasingly practised in the West as a way of promoting aspects of general psychological well-being, is mainly restricted to postural yoga, according to Singleton (2010), although it has never been the main feature of Indian

yoga. Despite a strong preference for divine healing and indigenous methods instead of using psychiatric tools to guarantee psychological well-being, there is a lack of measures using indigenous health system systems, such as Ayurveda for school-based intervention. In India, in the state of Bihar and SHAPE (School HeAlth Promotion and Empowerment) in the state of Goa, some interventions such as SEHER, the adolescent health programmer, meaning 'dawn' in Hindi,' Improving Evidence Base on School-based Promotion Interventions' have adopted a conceptual structure and implementation explicitly for Indian students (Shinde et al., 2017).

The conventional Indian wellness approaches, however, have been used sparingly. The scientific evidence for such approaches is further undermined by the lack of replication or confirmation studies. The present paper aims to research the results of two forms of interventions in view of the lack of such interventions: (1) psychoneurotic intervention based on the Indian kundalini jagran of the Chakra system and restoration of balance in panchmahabhoota and (2) meditation intervention based on the Eastern Buddhist tradition of satipatthana sutta based on psychological meditation intervention. In line with the eudemonic viewpoint suggested by Ryff, the social experiment was conducted to assess their effectiveness on the psychological well-being of adolescents (1989). Before expatiating on the experimental process, the following section describes the conceptual distinction of the two methods along with the theoretical foundations informing Riff's model.

Chandrashekhar (2015) describes Psychoneurotic as the "process of mental prowess taking energy present in the universe and then transferring it for healing purpose into the brain and neuro-system." Simple neurobics (neuro-muscular-respiratory actions), sound neurobics (vibration by vowel chanting), and light neurobics are a tripartite approach to healing (visualization of different colors). Significant prerequisites for holistic wellness are considered to restore equilibrium between the seven energy centres (chakras) and five elements (panchmahabhoot) of the human body.

If their vibrations do not harmonise with the energy of their respective colours or there is an imbalance in the energy flow between the five components of the human body, body organs and their related functions deviate from their ideal path (Azeemi&Raza, 2005; Hassan, 2000; Hirschi& Weiser, 2000). The practitioner participates in a variety of techniques through the combination of Light Neurobics, Sound Neurobics and Simple Neurobics, including various spiritual hand movements called mudras, directed visualisation, monochromatic coloured healing cabins, and mantra-induced meditative state. Looking at the available literature, there is comprehensive study body propounding support for the individual components. Results showed that repeated chanting of 'Om', the primordial sound considered to be the most effective mantra, had a calming effect on physiology in a study by Gurjar, Ladhake and Thakare (2009), where they used waveforms of frequency modulation for research. 'Mudra' includes a mental state of modesty and expansion of consciousness, symbolising different thoughts, emotions and representatives of different states of being (Mohini, 2015; Saraswati, 1999). The use of chromotherapy as

a supportive and alternative treatment method for the management of various diseases ranging from depression to cancer is also supported by Gul, Nadeem and Aslam (2015). Sound neurobics with its focus on holy vibration and Simple neurobics, postulating mudras as a previous physical condition to be assumed before participating in the former two, help Psychoneurotic achieve a complex equilibrium of 'mind-body-spirit' with the assimilation of the Light neurobics sharing similar tenets with chromo therapy (Chandrashekhar, 2017).

For diverse cultures, psychoneurotic practises have been used effectively. Stress management for adult females and enhancement of memory performance in high school students are some places where psychoneurotic intervention has shown promising results (Amarnath, 2017). There was also a substantial decline in the levels of preoperative anxiety in patients undergoing cataract surgery after patients received psychoneurotic and counseling services rather than just counselling services (Agrawal Gupta, 2018). In his pilot study for hypertension treatment, Mishra (2018) used psychoneurotics.

Mindfulness can be defined as "moment-by-moment awareness" (Germer, Seigel& Fulton, 2005) or as a "state of psychological freedom that occurs without attachment to any specific point of view when attention remains quiet and limber" (Martin,1997). In ancient spiritual traditions, mindfulness finds its origin and is most consistently expressed and stressed in the Buddhist spiritual tradition, which is at least 2550 years old. The ultimate objective condition for a being, recommended in tradition by practitioners, is nirvana - achieving freedom from suffering. At the level of the process, mindfulness is exercised against the psychological context of considering three main aspects of the teachings of Buddha, namely impermanence (anitya), suffering (dukkh) and non-self (anatta) (Collins, 1998). In the late 1970s, meditation on mindfulness started to be explored as an intervention to improve psychological well-being.

The two basic elements of mindfulness, as defined by Keng (2011), are comprehension of one's non-judgmental (sati) moment-to-moment experience and acceptance of one's moment-to-moment experience (upasampada). They are often known to be potentially powerful antidotes to common types of psychological distress-rumination, anxiety, anxiety, fear, anger-many of which include maladaptive impulses to prevent, suppress, or over-engage with one's distressing thoughts and feelings (Hayes & Feldman, 2004; Kabat-Zinn, 1990).

Researchers theorise that meditation on mindfulness increases cognitive sensitivity, eliminates rumination through disengagement from cognitive preservation tasks, and strengthens concentration skills through improvements in working memory. In fact, these cognitive gains lead to successful strategies for emotion control (Davis & Hayes, 2012).

Those students who were randomly assigned to engage in a mindfulness meditation intervention in a study of Chinese college students had lower depression and anxiety, as well as less exhaustion, frustration and cortical-related stress relative to a control group (Tang et al., 2007). Other fields in which mindfulness meditation has shown positive effects include decreased ruminations (Chambers, Yee Lo & Allen, 2008), enhanced

cognitive stability and functioning of attention (Moore & Malinowski, 2009) and increased ability of working memory over time in military set-up (Jha et al., 2010).

Two competitive approaches to well-being that have emerged as opposing competitors in the research field are present in the study of psychological well-being studies: the hedonistic approach to subjective well-being (Diener, 1994; Diener& Lucas, 2000) and the Eudaimonic approach to psychological well-being (Ryff, 1989; Ryff& Singer, 1998). The multi-dimensional model proposed by Ryff and Singer (1998) was derived not only from the view of Aristotle of the highest human good involving virtue and the realisation of one's ability, but also from the works of psycho-dynamically and humanistically ally-oriented psychologists such as Jung, Maslow, Allport, Rogers and developmental theorists of life spans such as Erikson, Buhler, Neugarten and Jaho (Ryff& Singer, 1996). In their seminal theories, the points of convergence lead to the formulation of six main dimensions, namely: autonomy, environmental mastery, personal development, positive relationships, life purpose and acceptance. The Psychological well-being paradigm by Ryff (1989) was used for the present study to assess the efficacy of two strategies because of the detailed theoretical framework and greater similarity to the conventional concept of 'well-being in India.

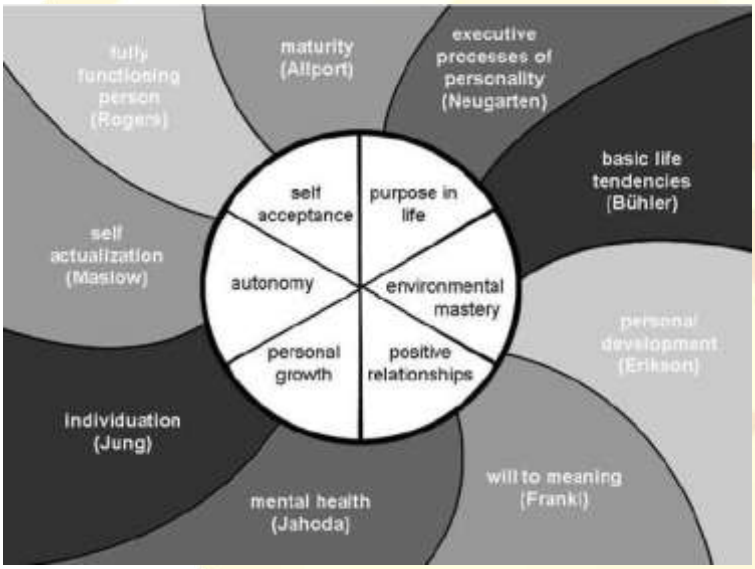

Figure 1: *Core dimensions of psychological well-being and their theoretical foundations* [adapted from 'Psychological Well-Being: Meaning, Measurement, and Implications for Psychotherapy Research', Ryff and Singer, 1996]

Looking at the available literature, there is a disconcerting shortage of intervention studies that take into account the effectiveness of psychoneurotic and mindfulness meditation on the teenage population's psychological well-being. The goal of the present study is therefore to bridge the research gap by evaluating the impact of four months of intervention using the two respective intervention strategies and by assessing their efficacy statistically. For the same areas below, three null hypotheses are considered.

CLINICAL FEATURES AND EPIDEMIOLOGY

Unipolar disorder diagnosis criteria focus on core symptoms of recurrent and pervasive sadness, along with a lack of interest or satisfaction in activities; related symptoms include low self-esteem, intense remorse, suicidal thoughts or actions, disruptions of sleep and appetite, and agitation or retardation of psychomotors. These parameters are primarily applied independently of age (including, with age appropriate modifications, in recent studies of pre-schoolers; Luby, 2010). However, marked irritability is permitted as a cardinal mood symptom only for children and young people in the DSM-IV criterion collection. The prevalence of major depressive disorders in early adulthood is estimated to range from 10%-17% in the past year (Moffitt et al., 2010), with women around twice as likely to be affected as men. Earlier development rates are much lower and show a distinct profile correlated with age and gender. In pre-pubertal infants, depression is relatively rare (1-2 percent), and rates vary marginally between boys and girls (Egger &Angold, 2006). In the early teens, levels then start to increase, more dramatically in girls than in boys. As a result, the median 12-month prevalence of unipolar depression is in the range of 4-5 percent in the mid-teens, and the female preponderance of adult depression is clearly identified (see Thapar et al., 2012).

Method

Sample: 60 participants, both male and female, aged between 15 to 17 (grade $10^{th}$to 12^{th}) were selected from a group of 300 students in a school set-up who were administered with Psychological well being scale (Ryff,1995). The students were trifurcated into three groups- intervention group 1, which received psychoneurotic intervention; intervention group 2, which received mindfulness meditation intervention, and control group, which received no intervention.

Tool:

Psychological well-being scale: The Ryff scale of Psychological well-being is developed by Dr. Carol Ryff& Keyes, University of Wisconsin. The 42-item scale has 6 sub-scales, each having 7 items. The items are scored on a 6-point scale ranging from Strongly Agree to Strongly Disagree. For each category, a high score indicates that respondent has mastery of that area in his/her life. The following 6 components of psychological functioningare:

- Self acceptance: A positive attitude towards oneself and one's pastlife.
- Positive relationship: High quality, satisfying relationships withothers.
- Autonomy: A sense of self determination, independence and freedom from norms.
- Purpose in life: Having life goals and a belief that one's life ismeaningful.
- Environmental Mastery: The ability to manage life and one'ssurrounding.
- Personal Growth: Being open to new experiences as well as having continued personal growth.

The internal consistency coefficient are very high (between 0.86 and 0.93) and test- retest reliability coefficient of a sub sample of the participants over 6 week period was also high (0.81-0.88). Internal consistency coefficient for Ryff's six sub-scales range from 0.82 to 0.90.

Neurobic machine: It measures the electro dermal activities occurring due to changes of bio- electrical impulses in Central nervous system due to mood swings or agitated mind. Also called mental thermometer, it ranges from 0-100, where lower scores reflect calmness of mind/mood.

Procedure: Two schools in Delhi-NCR were contacted and procedure and goal of the intervention was explained to authorities. Group administration of Psychological well being sub scale was done in students' respective class. 210 students from grade $10^{th}$to 12^{th}participated out of which, 60 students scored either 150 or less,which was set as a baseline of poor psychological well-being. Signed consent form from students as well as their parents was procured as per ICMR guidelines. Thereafter, students were allocated to one of three groups. They received 1 hour intervention once a week for four months under field experts and practiced respective interventions half an hour everyday by themselves. Scores on Psychological well-being were taken before the intervention and then after four months intervention.

Statistical analysis: The data were analyzed using Statistical Package for Social Sciences (SPSS) 21 for Windows (SPSS, Inc., Chicago, IL, USA). Prior to data entry, the inventory was checked for completeness. Descriptive statistics (including means and standard deviations) were calculated for all scales and subscales. One way ANOVA was applied to assess effectiveness of treatment. Pearson correlation was also computed to access psychological well being score with psychoneuroticscore.

CONCLUSION

Young adulthood is a time in which the foundations for future education, jobs, major roles in life and long-term productive objectives are created. Similarly, the development of preventive therapies that are intended to avoid the development of more severe

psychopathologies in adulthood is a significant time. This stage plays an important role in the study of developmental psychopathology, since it is difficult to alter certain actions and emotional behaviours after this maturation interval. This time is particularly important for the emergence or intensification of various types of behavioural and emotional disorders, such as problems of internalisation (depression, bipolar disorder), problems of externalisation (crime, violence), addictive disorders (abuse of alcohol) and suicide (Trama& Modi, 2016). Developmental issues have become more salient as their growth trajectory is subjected to completely different meaning owing to the conventional and contemporary importance juxtaposition. Alsoprogrammes aimed at enhancing their well-being must also integrate facilitative elements of both indigenous and contemporary psychological well-being models.

There is a general consensus that any clinical paradigm will be superior to those less common, with broader empirical support. While it has helped eradicate obsolete models of treatment, it might not be beneficial to use it as a rule of thumb. Many indigenous models are not only at average, but could have greater effectiveness, since they are resonant with the system of indigenous beliefs.

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