ISSN 0971-9962

INDIAN JOURNAL OF SOCIAL PSYCHIATRY

(Official Publication of Indian Association for Social Psychiatry)

Vol.: 25 **Number: 1-2** **2009**

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INDIAN JOURNAL OF SOCIAL PSYCHIATRY
Vol 25(1-2), 2009

Contents

Editorial

Stalking Behaviour.....1

Review Articles

Neurobiology of Consciousness: What do we know yet.....3

Samir Kumar Praharaj, Nishant Goyal, Pushpal Desarkar, Manu Arora

Invited Article

The Different Faces of Magic.....11

Amlan Kusum Jana, Joyita Mazumder, Shashi K. Pande

Research Articles

Development and Standardization of Life Skills Scale.....17

M.N. Vranda

Dissociative Experiences in Schizophrenia.....29

Indranil Saha, Daya Ram

Play Profile of Mentally Challenged Children and Adolescents.....38

Vinay Kumar Singh, Masroor Jahan, Alka Nizamie

Temperament and Character Dimensions of Patients with Bipolar Disorder.....44

Deepali Batra, Vinod K. Sinha

Response Inhibition and Working Memory in Drug Free/Drug Naive Schizophrenia Patients and Their First Degree Relatives.....49

Shazia V. Siddiqui, S. Haque Nizamie, Devvrata Kumar

Brief Communications

Role of Psychological Assessment in Adult Patients with Psychiatric Disorders: Three Case Reports 56

Uttara Chari, Anisha Shah, G. Venkatasubramanian

Book Review

An Insight into Dementia Care in India.....61

Sujit Sarkhel

Memoirs

Coping with Chronic Mental Illness.....63

Instruction for Authors.....65

Indian Journal of Social Psychiatry (2009), 25(1-2), 1-2.

Editorial...

STALKING BEHAVIOUR

In recent years, stalking has not only become an important social and legal issue but also an emerging clinical problem for mental health professionals. The literal meaning of stalking is the crime of following and watching subjects over a long period of time in a way that is annoying or frightening (Oxford Dictionary, 7th edition, 2005). Stalking describes a constellation of behaviours in which one individual inflicts on another, repeated unwanted intrusions and communications. The intrusions can involve loitering nearby, maintaining surveillance and making approaches. The communications can be through letters, telephone, electronic mail, graffiti, or notes attached (e.g. to the victim's car). It may be associated with other forms of harassment such as ordering goods on the victims' behalf, interfering with their property, making false accusations and initiating false legal actions (Pathe & Mullen, 1997). Stalking can escalate and lead to intimidation, threats or violence. Anyone can be the victim of stalking, including previous or present partners, casual acquaintances and friends, professional contacts, workplace colleagues, strangers, or those in the media spotlight (Mclvor & Petch, 2006). It appears to be an increasing phenomenon. Till date in India, we do not have published data on this important issue.

The lifetime prevalence of stalking was reported to be between 8-12% for women and 2% for men in the USA (Tjaden & Thoennes, 1998). Stalking affects nearly 15% of Australian women at some time in their lives (Mullen et al, 2000). Stalkers show a preference for young victims aged between 18 and 29 years and very few aged over 40 years. Majority of female victims report being stalked invariably by a male perpetrator, whereas males are as likely to be harassed by men as by women.

RISK FACTORS

Though less known and under-researched in India, information regarding stalking can be obtained from courts and police stations. Mental health professionals have significant role to play for stalking victims. References obtained regarding risk factors indicate the following:

1. Previous relationship: An intimate relationship with the stalker poses high risk of physical violence.
2. Threats: Majority of the victims are threatened. Those who are in limelight e.g. celebrities and other public figures are at high risk. There are conflicting evidences regarding stalking behaviour and physical assault (Pathe & Mullen, 1997; Purcell et al, 2002).
3. Psychiatric disorders: Presence of mental disorders with stalking behaviour leading to physical violence is a controversial area. Published literature suggests that stalkers having psychiatric disorders are less likely to be violent (Mullen et al, 1999).
4. Presence of substance abuse: Presence of substance abuse in stalkers leads to assault, threats and property damage (Mullen et al, 1999). There can be a link between psychiatric disorders with substance abuse leading to physical violence.
5. Recurrence: Victims of stalking fear stalking would happen again. The degree of prior intimacy with the victim may be the most useful predictor of the persistence of a stalking episode (McEwan et al, 2007). It may wax and wane over a period of time.

IMPACT

In our society the experience of stalking is not a rare phenomenon and limited to celebrities and public figures only. Youngsters do face stalkers and its impact can be summarized as:

- Decline in academic, social and occupational functioning.
- Modification in working pattern.

- Feeling of guilt, inability to trust and anger.
- Fear distress and short harassment.
- Compelled to change residence, working place and telephone numbers.

STALKING AND LAW

Stalking is a new word; however, the behaviour is not new to the criminal judiciary system. There has been a surge of anti-stalking legislation since 1990 in the USA, Australia, Canada, the UK and New Zealand. Similar laws are being framed in European countries. In India, the need for new law is felt as the present law does not define and reflect the various kinds of sexual assault that women in particular are subjected to in our country. The act is called the Criminal Law Amendment Act, 2006. A new section under 509B has been proposed in the Indian Penal Code which states: Any person who stalks a woman with the intention to cause (a) a serious harm or injury to that woman or a third person or (b) apprehension or fear of serious harm of injury to that woman or to a third person shall be punished with imprisonment of either description which may extend to seven years or with fine or with both.

For this a person shall be taken to stalk a woman if, on at least three occasions, that person:

a. Follows or approaches the woman or

b. Loiters near, watches, approaches or enters a place where the woman resides, works or visits or

c. Keeps the woman under surveillance or

d. Interferes with the property in possession of the woman or

e. Gives or sends offensive material to the woman or leaves offensive material where it is likely to be found by given to or brought to the attention of the woman.

f. Acts covertly in a manner that could reasonably be expected to arouse apprehension or fear in the woman or

g. Engages in conduct amounting to intimidation, or an offence (word, gesture or act) with a sexual purpose or with intention to insult a woman.

The law, however, remains silent over female stalkers.

CONCLUSION

There is pressing need to improve our understanding of the motivation and behaviours of stalkers and its outcome in Indian context. Though reports are available through personal account or media, personal research is needed in this area.

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Indian Journal of Social Psychiatry (2009), 25(1-2), 3 - 10.

Review Articles...

NEUROBIOLOGY OF CONSCIOUSNESS: WHAT DO WE KNOW YET?

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ABSTRACT

The search for the neural correlates of consciousness has gained momentum recently. Several of them have been hypothesized and subsequently strengthened by evidences from functional imaging and electrophysiological studies, although none is able to explain on its own the complex phenomenon of consciousness. Nevertheless, thalamocortical connections may be implicated in part in the generation of consciousness. Future studies need to be designed in such ways that they explain the dynamic nature of consciousness.

Key Words: Consciousness, neurobiology, neural correlates

INTRODUCTION

The word 'consciousness' is derived from the Latin word 'conscio', which is formed by coalescence of 'cum' meaning 'with', and 'scio' meaning 'know'; in its original Latin sense, "to be conscious of something was to share knowledge of it with someone else, or with oneself" (Zeman, 2001). Consciousness is a subtle as well as one of the most complex entities in the universe. Our very experience is based on our being conscious. The interest in consciousness intrigued many in the past who had philosophical debates on this subject, whereas the recent approach is to uncover the underlying neurobiology of consciousness.

The expression "neural correlates of consciousness" (NCC) was first used by Crick and Koch (1990) to describe the neural models which try to explain consciousness, and has been defined as a "specific system in the brain whose activity correlates directly with states of conscious experience". A major area while studying NCC is to investigate the difference between neural activities that are associated with awareness and those that are not. It was suggested that an NCC may involve a very small number of neurons (perhaps in thousands) with certain distinctive properties (Crick & Koch, 1998). Chalmers (1998) has compiled a whole collection of proposed NCCs, his neural correlate zoo. The list includes about 20 possibilities, some of major ones are: 40 Hz oscillations in the cerebral cortex (Crick & Koch, 1990), intralaminar nuclei in the thalamus (Bogen, 1995), reentrant loops in thalamocortical systems (Edelman, 1989), 40 Hz rhythmic activity in thalamocortical systems (Llinas et al, 1994), extended reticular-thalamic activation system (Newman & Baars, 1993), neural assemblies bound by NMDA (Flor,1995), neurochemical levels of activation (Hobson, 1997), neurons in inferior temporal cortex (Sheinberg & Logothetis, 1997), neurons in the extrastriate visual cortex projecting to prefrontal areas (Crick & Koch, 1995), and visual processing within the visual stream (Milner & Goodale,1995).

There are reasons to claim that the search for the NCC should now be augmented by similar efforts aimed at unraveling the behavioural correlates of consciousness (BCC), and the computational correlates of consciousness (CCC) (Cleeremans, 2005). Although the search for BCC is not new, the search for CCC has barely begun. However, there is a small community of scientists specifically pursuing the goal of building conscious machines (Holland, 2003) through the development of implemented computational models aimed at explaining consciousness (Cotterill, 1998; Aleksander, 2000; Perruchet & Vinter, 2003) or providing detailed accounts of the difference between conscious and unconscious cognition (Dehaene et al, 2003).

Accepted on 6th May, 2009

There are three major components of consciousness as suggested by Zeman (2001): (1) consciousness as waking state or the degree of wakefulness (e.g. drowsiness, stupor, coma), (2) consciousness as experience or awareness (e.g. sensation, emotion, memory, intention), and (3) consciousness as mind or self consciousness (e.g. self-monitoring, self-recognition, self-knowledge). In this article, we attempt to review the prominent neurobiological models and evidences gathered so far to support the first and second components.

THEORETICAL MODELS OF CONSCIOUSNESS

All the models are based on the assumption that some activity of the brain is necessary to produce consciousness. These models are not mutually exclusive; they might explain a part of the complex phenomenon of consciousness. There are evidences from the functional neuroimaging and electrophysiological studies to support these models.

Ascending Reticular Activating System (ARAS)

Moruzzi and Magoun (1949) were the first to suggest that critical areas for arousal were in the reticular core of the upper brainstem. Jaspers (1954) extended the concept further; he considered the thalamus and the thalamic reticular nucleus (TRN) to be the rostral extension of the reticular activating system. Subsequent studies have demonstrated that ARAS is not restricted to the classical reticular nuclei of brainstem, but is a group of specialized nodes in a complex network controlling arousal, comprising of: cholinergic nuclei in the upper brainstem and basal forebrain; noradrenergic nuclei, especially the locus coeruleus; a histaminergic projection from posterior hypothalamus; and probably dopaminergic and serotonergic pathways arising from the brainstem (McCarley, 1999). Much of the influence exerted by these pathways is mediated by the thalamus, which can be regarded as the apex of the ARAS, as well as a critical synaptic relay for most sensory and many intracerebral pathways (Jones, 1998). The role of thalamic neurons in selective attention was elaborated by Crick (1984) in his searchlight hypothesis; it proposes that TRN have extensive inhibitory axon collaterals, which are supposed to generate large-scale intra-TRN cellular interactions, and produce successive thalamic burst discharges that are required for a searchlight. TRN is responsible for 'gating' specific reticular information that is transmitted to cortex and feedbacks the information to brainstem (Young & Pigott, 1999). In PET studies, a pattern of selective thalamic hypometabolism has been documented during slow wave sleep (Maquet, 2000) and drug-induced anesthesia (Alkire et al, 2000).

Neural Assembly

Donald Hebb defined neuronal cell-assembly as "a diffuse structure comprising cells in the cortex and diencephalon … capable of acting briefly as a closed system, delivering facilitation to other such systems" (Hebb, 1949). Such assemblies, where 10 million neurons can synchronize in activity over merely 230 ms, have been established (Grinvald et al, 1994); they are postulated to be essential for the production of conscious state. According to the neural 'time-on' theory (Libet, 1993), consciousness is associated with neuronal activities that persist for a long enough time, with a minimal duration of around 500 msec; binding is achieved by this synchronized activity of the set of neurons over the short time window (Von der Malsburg & Schneider, 1986). In the synapses of neuronal assemblies (known as Malsburg synapses), the strength of the synapse temporarily increases when there is a strong correlation between presynaptic and postsynaptic activity (Crick, 1984). It has been suggested that these transient, three-dimensional configurations of large-scale assemblies throughout the brain, which need not respect conventional anatomical boundaries, will correlate with different degrees of consciousness at any moment (Greenfield, 1997). These assemblies will vary in size from one moment to the next according to: (1) the strength of the trigger (analogous to a stone in a puddle causing ripples) that initiates their transient synchrony; (2) the ease with which the neurons will be synchronized, which in turn is dependent on the availability of facilitating 'modulatory' chemicals. These chemicals will originate from widespread sources in the brain, and also from the rest of the body, including the immune

system. It is this two-way iteration of chemicals, of which the assembly size is a mere index that can be viewed as 'consciousness'. Imaging of these transient assemblies would provide a net index of consciousness (Greenfield, 2000). Perhaps in future, a unit could be formulated that determines an assemblage, i.e., a quantifiable measure reflecting the combined temporal and spatial dynamics of constantly changing neuronal assemblies (Greenfield & Collins, 2005).

NMDA activity

Hans Flohr (1995) hypothesized that some of the rapid, transient cell assemblies, which are building blocks for mental representations, are conscious. The ascending reticular activating system determines how likely it is that a cell assembly forms as well as aids in binding together several simple assemblies into more complex representational states. The occurrence of states of consciousness critically depends on a specific class of computational processes that are mediated by the NMDA synapse. Arguments in favor of the hypothesis are based on the idea that NMDA receptor activity is capable of forming representational states in the brain and all general anesthetics ultimately inhibit NMDA receptor activity. Hence, NMDA receptor activity is essential for consciousness. Autoradiographic techniques (Flohr et al, 1998) have been used to visualize the activation state of the cortical NMDA synapses directly; the difference between anesthetized and conscious brain is the presence or absence of NMDA-dependent computational processes. EEG recordings of primary auditory cortex during ketamine and general anesthesia is consistent with this view; mid-latency evoked potentials are almost unchanged with ketamine (Schwender et al, 1993).

Dynamic Core Hypothesis

Neural Darwinism (ND) is a large scale theory of brain function proposed initially by Edelman (1978), which suggests that brain development and dynamics are selectionist in nature, not instructionist, in contrast to computers, which carry out explicit symbolic instructions. Selectionist processes have four features: diversity; ability to reproduce or amplify; process of selection operates on the products of diversity; and degeneracy, the ability of structurally different combinations of elements to perform the same function (Edelman & Gally, 2001). The application of ND to neuronal function requires another key concept, reentry: the recursive exchange of signals among neural areas across massively parallel reciprocal connections, which enables the spatiotemporal coordination of activity in different regions of the brain. According to the dynamic core hypothesis, consciousness arises from the fast integration of a large amount of information within a 'dynamic core' of strongly interacting elements (functional cluster of neurons). Reentry, through reciprocal interconnections between the regions of thalamocortical system mediates this rapid integration in hundreds of milliseconds. The reentrant circuit is a critical evolutionary development which provides sufficient means for the appearance of phenomenal consciousness. The dynamic core is a process rather than a thing or area, and is defined in terms of neural interaction; it is spatially distributed (not localized), and changes its composition over time (hence termed 'dynamic'). The core includes posterior corticothalamic regions involved in perceptual categorization interacting reentrantly with anterior regions involved in concept formation, value-added memory, and planning. It was also suggested that splinter cores may exist alongside a dynamic core, which may underlie cognitive activities that remain unconscious (Edelman & Tononi, 2000). MEG data (Tononi et al, 1998) provides clear indication that the set of brain regions whose activity correlates with conscious experience is widely distributed and the distribution differs in different subjects.

Visual consciousness

This neural model of consciousness is based on the synchronized 40-Hz oscillations observed in visual cortex in anesthetized cats (Engel et al, 1991). Crick & Koch (1990) proposed that these cortical 40-Hz oscillations support an attentional mechanism that temporarily binds the relevant neurons together by synchronizing their nerve impulses at the oscillatory frequency. Later, Crick (1994) expanded this to

include thalamic reverberatory connections with the cortex, the thalamocortical oscillations. It was suggested that the activity of V1 neurons, although necessary for normal vision, do not contribute to awareness; therefore, it does not constitute part of the NCC (Crick and Koch, 1990). The NCC for vision was hypothesized to be multi-level and symbolic, i.e., there is a close correlation between features of the visual scene and the neural activity that represents them (Crick, 1994; Koch, 1998). It was anticipated that neurons involved in the NCC may have some unique combination of molecular, pharmacologic, biophysical and anatomic properties; their firing will stand out above the background of neuronal firing for at least 100-200 msec. Crick (1994) had speculated that bursty pyramidal cells in layer 5 of visual cortical areas may play a critical role in NCC. Another suggestion was that visual consciousness arises from various local cortical activities, known as multiple visual micro-consciousnesses (Zeki & Bartels, 1998); this was based on the observation that there is a subtle temporal asynchrony in the perception of different visual characteristics (e.g. color, motion), which was attributed to discrepancies between the processing time in the associated cortical visual areas. Logothetis (1998) reported from binocular rivalry task in macaque monkeys that inferior temporal cortex neurons responded to perceptual dominant stimulus, which makes it a likely candidate for NCC. Functional brain imaging in humans undergoing binocular rivalry has revealed that areas in the right prefrontal cortex are active during the perceptual switch from one percept to the other (Lumer et al, 1998).

Global Workspace

It was proposed that the contents of consciousness can be similar to that of a global workspace which can broadcast widely through the nervous system to recruit the operation of the numerous unconscious specialized sub-systems to the task in hand (Baars, 1988; Baars & McGovern, 1996). The global workspace provides a central information exchange receiving its input from the input processors which currently command attention and broadcast it widely through the brain. The two processing principles include competition through the global workspace lowering activation levels of global messages, and raising it. The inputs selected for conscious awareness depends upon the activity of reticular activating system and TRN, along with other areas like parietal and temporal cortex (Baars, 1988). Freeman (1995) has experimental support from his analysis of EEG patterns for the global processing mode involved in consciousness. Global workspace has flexibility of response with relatively slow, voluntary, limited capacity, serial processing (Zeman, 2001). In theater metaphor (Baars, 1997; 1998), consciousness is a brightly lit spot cast by a spotlight of attention shining on the theatre stage (working memory, including 'inner speech' and 'visual memory'); the players onstage (outer and inner senses, ideas) which come under focus become the content of conscious experience. Behind the scenes are executive processes, including a director, and a great variety of contextual operators that shape conscious experience without themselves being conscious. The 'audience' includes unconscious mechanisms, e.g. automatic routines, memory systems, etc. A similar model, neuronal workspace model (Dehaene & Naccache, 2003), suggests that a significant piece of the neural machinery of what is called 'access to consciousness' is found in 'workspace neurons' which have long range excitatory axons for communication between parts of brain allowing cognitive performances that are otherwise unattainable; these include inhibition of habitual responses, planning, evaluation and monitoring of novel strategies, and higher level semantics.

Thalamocortical Dialogue

The physiological candidate which might play a key role in consciousness is neural activity synchronized in gamma frequency range (25-50 Hz), mostly close to 40 Hz, between thalamic and cortical structures (Llinas & Pare, 1991). This is known as 40-Hz thalamocortical oscillations and may be the likely candidate for the binding problem (Singer & Gray, 1995). The oscillations are intrinsic electrical properties of thalamic neurons generated at dendritic level when the thalamic neurons were depolarized beyond -45 mV, which depend on activation of voltage-gated calcium channels. The

thalamocortical system functions on the basis of temporal coherence, embodied by simultaneity of neuronal firing based on passive and active dendritic conduction along apical dendritic core conductors. The activation results in generation of thalamocortical resonant column, which comprises a basic functional unit in the generation of consciousness. The specific thalamic inputs constantly update cortical structures about external events (i.e., content), whereas the nonspecific thalamic inputs serve to bind content information on the basis of internal significance (i.e., context) arising from association cortices (Llinas et al, 1994). Concurrent summation of both along the radical dendritic axis of the pyramidal elements by coincidence detection would generate a single cognitive experience, which is the basis of consciousness. The site of coincidence detection has been hypothesized to be the intralaminar nuclei of thalamus. MEG data reveals a robust 40 Hz waveform during wakefulness and dreaming (Llinas & Pare, 1991).

Somatic Marker Hypothesis

Damasio (2000) proposed that background feelings are essential for the emergence of core consciousness or sense of self, which is generated moment to moment in a 'pulse-like' fashion, reflecting both the ongoing interaction of the human organism with the environment and minute-to-minute changes in homeostatic body states. Subjective perception of body state requires right insula activity, and activation of anterior cingulate cortex allows for the motivational component that accompanies most feelings. Extended consciousness refers to that same 'moment-to-moment self', extended by connections to both past experiences and the anticipated future, creating autobiographical memory. The simultaneous holding of images from autobiographical memory and images of objects for a substantial amount of time results in an unified experience of knowing. Another model which is similar, the comparator model (Gray, 1995), views that the contents of consciousness generated corresponds to the outputs of a comparator that, on moment to moment basis, compares the current state of the world with a predicted state, which is internally generated from past world inputs on the basis of planning or predictor system. The area devoted to generating predictions is conjectured to be the hippocampus, which, along with the amygdala, plays an important role in reward memory for inputs.

Quantum Consciousness

Penrose-Hameroff's "Orch OR" model of quantum consciousness (Penrose, 1994; Hameroff, 1994) proposes that consciousness involves a Planck scale decoherence of quantum superpositions, that they call "Orch OR" (orchestrated objective reduction of quantum coherence). In quantum physics, matter is not only a solid substance; there can be simultaneous coexistence of infinite states of a same particle (Penrose, 1994), known as superposition of simple states. Large-scale quantum coherence in brain could be explained when Bose-Einstein condensation was found likely at body temperatures, as in brain. In our brain two systems occur, a 'clasical one' and a 'quantum one'. The membrane of microtubules has been postulated to effectively protect the quantum processes from getting lost to the environmental randomness (the wave-function collapse); thus, consciousness is a manifestation of the quantum cytoskeletal state. Consciousness may arise from the 'excitation' of such Bose-Einstein condensate; whenever the condensate is excited by an electrical field, conscious experience occurs.

CONCLUSION

Conscious phenomena are being studied at many different levels of brain organization using different approaches. However, no explanatorily competent theory has yet emerged. The major shortcomings are: most studies are essentially visuocentric, neglecting other functional domains; another is that exploration is typically limited to cortex, disregarding subcortical activity as merely part of the background conditions. The thalamus, with its connectivity to many cortical and subcortical structures, and the cellular structure is well-suited to negotiate temporality in diverse aspects as in learning, ongoing prediction, attentional shifts to different sensory-motor

tasks, calling up stored timing information to getting the timing right (Churchland, 2005). In particular, the significance of the vast number of projections from cortical layer 5 to the thalamus need to be elucidated (Guillery & Sherman, 2002). Therefore, until the thalamocortical connections are better appreciated, neuroscientists may not be able to address conscious phenomena adequately from the perspective of the motor and sensory organization.

Somehow, many continue to believe that there will be a single 'aha' moment when some neuroscientist suddenly comes up with the mechanism of consciousness. Functional accounts of consciousness which point that it is a single, static property associated with some mental states and not with others is doomed to fail. Instead, consciousness refers to several, possibly dissociable, aspects of information processing, and it is a fundamentally dynamic, graded, process (Cleeremans, 2005). Thus, the efforts to unravel the neurobiology of consciousness must consider its dynamic character and the large-scale integration resulting in the phenomenal awareness in humans.

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Indian Journal of Social Psychiatry (2009), 25(1-2), 11 - 16.

Invited Review .....

THE DIFFERENT FACES OF MAGIC

Amlan Kusum Jana[1], Joyita Mazumder[2], Shashi K. Pande[3]

"The magician and the politician have much in common: they both have to draw our attention away from what they are really doing."

Ben Okri (Nigerian author)

INTRODUCTION

Magic is ubiquitous. Although disreputable-sounding and at times even connoting evil, it nevertheless is the psychological substratum of a great many human activities. Because of the different faces and masks and disguises it wears, its role goes often unrecognized. Through the ages, it has influenced a whole spectrum of behavior: in its classical form in indigenous tribes and cultures, in subtler mode in behaviors of physicians, artistes, politicians and other public figures, and in its all too pervasive presence in the vast sea of superstitious beliefs that impinge upon our lives daily. Irrespective of our conscious awareness, magic creeps into all walks of life and all forms of culture-in the ancient cultures of India and China as well as in the ultra-modern ones of America and Europe. The number thirteen is as loaded with magic in India as it is in London's Ritz hotel.

The nature of magic has itself transformed over the passage of time: the sympathetic magic of the sorcerers into the secular magic of the commercial houses.

IS THE PHYSICIAN A MAGICIAN IN WHITE COAT?

Several authors have suggested that physicians and magicians had similar origins when traced back in history even as their professions have taken varied routes subsequently. Many of the "tricks"-maneuvers-performed by the physician, albeit largely unconsciously, would leave his client "spellbound", and satisfied as well! According to Sokol (2008), the physician of today and magicians share some "superficial" similarities that include the intent to leave the 'client' better off than when the two parties met. When analyzed properly, their modus operandi has several commonalities; a deep insight into these could actually help the clinician improve his skills further.

Magicians have multiple techniques to psychologically manipulate the spectator and doctors undoubtedly use some of the same techniques, whether consciously or not. These include verbal manipulations, techniques such as looking at one's watch, crossing one's arms, adopting an authoritarian or pleasant tone of voice, nodding, smiling or frowning. Whether during medical consultation or during the process of obtaining consent, these techniques are in operation and lead to the 'doctor's choice', in which the patient is unaware that he is being imperceptibly guided towards one option. Clarity of communication is another technique used by magicians which ought to be practised by clinicians, especially while disclosing important information or obtaining consent. Likeability is another quality which all magicians try to enhance and is an essential element in doctor-patient interaction as it puts patients at ease, enhances or maintains trust, and is likely to lead to more open discussions and increased degree of compliance. In today's medicine, dominated by superior technology and multiple investigations, the element of 'humaneness"-so commonplace in the shamans and priest-doctors of yesteryears-is egregiously lacking; it must be revived for the overall betterment of the patients.

THE DEVELOPMENT OF SUPERSTITION

Paranormal beliefs are defined as those, which violate limiting principles of science, and are incompatible with normative perceptions, beliefs, and expectations about reality (Tobacyk & Milford, 1983). Such beliefs are common among the developed and developing countries alike with even the majority of United States residents holding at least one paranormal belief (Bobrow, 2003).

Various explanations have been offered for the possible etiologies of paranormal beliefs. Some researchers have focused on cognition, positing that beliefs arise out of deficient

Accepted on 24th May, 2009

reasoning processes (Alcock & Otis, 1980), poor reality testing (Irwin, 2004), impaired cognitive processing (Dudley, 1999), attributional error in response to ambiguous stimuli (Blackmore & Troscianko, 1985), or various cognitive biases such as the confirmation bias (Alcock & Otis, 1980). However, the results are equivocal since some studies investigating cognitive factors have failed to find significant associations with paranormal belief (Roe, 1999; Royalty, 1995).

According to some developmental psychologists, a belief in supernatural forces originates in the same way that also leads us to rational explanations through intuitive reasoning. This emerges early in the development of knowledge. It is supported by the fact that although babies do not gasp or applaud with surprise at conjuring magic, such as objects suddenly disappearing, the infants look longer at apparently impossible sequences (Baillargeon & Graber, 1987; Wynn, 1992). Walden et al (2007) demonstrated this phenomenon in infants of six months of age. Based on these events, it has been suggested that normal perceptual processes-filling information gaps, predicting-are the basis of magic.

Jung's theories have provided an important psychoanalytical viewpoint into the theories of development of superstitious beliefs. While describing the development of human personality, Jung had discussed two phenomena: Causality where the deeds of past affect the current behavior, and Teleology where a goal guides and directs human destiny (Hall et al, 2002). Later in his life, however, Jung (1960) proposed a more interesting theory that was neither Causality nor Teleology. This was what he called the principle of synchronicity. It is about the events that occur together but are not related by a cause-effect link. This includes events like thinking about a person and then meeting him surprisingly, or dreaming about an untoward event and finding out the next morning that the event did take place at the same time in an exactly the same manner. Jung had shown from literature innumerable mentions of events like mental telepathy, clairvoyance and had argued that many of these events were not just chance coincidences; rather they showed that nature maintains and follows a different type of order: the rule of synchronicity. Jung went ahead to say that the synchronistic phenomena were related to the nature of the archetypes. An archetype, according to him could bring into consciousness a mental image of a physical event even though the physical event is not perceived directly.

According to an important contribution by Bruce Hood (2006), belief in the supernatural derives from normal brain processes. He offers several lines of evidence in favour of his theory:

- The brain is designed to process and fll in missing information from a complex world of input.
- Understanding and predicting the world requires generating intuitive theories that infer invisible mechanisms to explain our experiences.
- Normal intuitive theories can bias rational individuals toward irrational reasoning.
- Magical beliefs have adaptive value.

Thus, belief in the supernatural and its persistence in the most advanced of societies remain among the most intriguing areas of research in human psychology.

CAN RELIGION BE DISENTANGLED FROM MAGIC?

Scholarly pursuits to understand and analyze various cultures have involved the study of magic as much as they have required the study of religion. These pursuits have shown that a primary function that magic serves is as a foil for religion. Performance of detailed and elaborate rituals, involvement of demons and spirits, as well as healing of diseased mind and soul, are some of the many common features between magic and religion. Several authors have tried to distinguish between the two in spite of recognizing the fact that the distinction indeed gets blurred in certain areas.

One of the earliest and classical attempts in this direction was made by Frazer (1957). The first criterion proposed by Frazer is that magical rites and not religious rites are sympathetic rites. The second criterion proposed by Frazer is that a magical rite normally acts on its own, that is, it constrains, while religious rite worships and conciliates. The former has an automatic, immediate reaction; the latter acts indirectly through a kind of respectful persuasion-here the agent is a spiritual intermediary. Since religion involves belief in and an attempt to please a supernatural being to alter the course of events, it assumes that the course of nature is amenable to change. This again, according to Frazer, stands in contrast to magic which assumes that the events of nature are inevitable and unalterable. The magician exhibits unquestioned

authority and arrogance when he claims the power to control all the forces of nature. This stands in striking contrast to the humble priest who bows to the supreme creator with reverence. However, as human intelligence progressed, man realized the fallacy of his belief in capability to control nature. He yielded, gradually, to recognize the existence of a superior being who created and controlled everything and who ought to be appeased to protect himself from the wrath of nature. This higher intelligence, according to Frazer, gave way to religion in place of magic.

Some of these theories have come under subsequent criticism. This effort to separate religion and magic into watertight compartments and seeing each other as evolutionary stages has been criticized by Marett and Levy-Strauss (Styers, 2004). According to Levy-Strauss, "There is no religion without magic any more than there is magic without at least a trace of religion" (Styers, 2004). According to Malinowski (1954), magic remains in the hands of specialists while religion is for all and sundry. One more difference between magic and religion is the play of black and white in witchcraft, while religion in its primitive stages has but little of the contrast between good and evil. According to Mauss (1972), religious rites can also be sympathetic. He went on further to say that religious rites may also constrain and, in most of the ancient religions, the God was unable to prevent a rite from accomplishing its end if it had been faultlessly executed. Moreover, all magical rites may not have a direct action, since spirits and even Gods may be involved in magic. To Mauss, magic and religion are extremes that form two differing poles: the pole of sacrifice and the pole of evil spells. Religion has always created a kind of ideal towards which people direct their hymns, vows and sacrifices. These are areas which are avoided by magic, since association with evil as an aspect of magical rites already exists in people's mind. Between these two poles, we have a confused mass of activities whose specific nature is not immediately apparent.

MAGIC AND PSYCHOANALYSIS

The phenomenon of magic has intrigued psychoanalysts as much as it has stimulated anthropologists. Freud has dealt with this issue extensively in his work 'Totem and Taboo' (1913). In his effort to explain magic, Freud has elaborated upon the concept of 'animism'. Animism in its broader sense deals with spiritual beings in general. Animism, according to Freud-who, it needs to be remembered, was steeped in a monotheistic culture-is the primitive view of nature adopted by the primitive races who believed that not only animals and plants but all the inanimate objects in the world are animated by various spiritual beings who are responsible for various natural and unnatural phenomena. Another important aspect of animistic thinking is the concept of omnipotence of thoughts. This stems from the excessive importance attached by the primitive man and the neurotic to his thoughts and various other psychic acts. Magic, for the primitive man, is the technique of dealing with the external world and gratifying his narcissistic ego. Freud went further and said that the logical thinking behind magic was akin to the primary process thinking that was evident in dreams.

Ferenczi (1952) elaborated Freud's idea further and traced out various steps in the development of the ego that lead from animism and magic to an appreciation of objective reality. Freud's and Ferenczi's explanations of the illusion of magical omnipotence as a kind of mental infantilism go some way to explain the close association of magic with primitive states of mind (pathological and normal), primitive cultures, and even some anachronistic forms of behaviour in adults and advanced cultures (Rudan et al, 2003).

PRAYER AND ITS MAGICAL EFFECTS

Prayer is most often defined simply as a form of communion with a deity or a creator. Poloma and Gallup (1991) have described four different varieties of prayer: ritual or recitational, conversational or colloquial, petitionary, and meditative. Recitational prayer involves uttering memorized verses or reading out aloud from religious texts, conversational prayers involve informal communication with god, petitionary prayers are mainly characterized by asking for fulfillment of various needs or wishes and meditative prayer requires experiencing the company of the almighty. A prayer session may involve more than one type of prayer.

Some of the widely accepted mechanisms explaining beneficial effects associated with prayer and religious activities include: (1) creating a mind set for health-related behavior (2) enhanced social support (3) stress-buffering (4) cognitive effects and (5) the psychodynamics of faith (Levin & Vanderpool, 1989). The possible physical preparation for a prayer includes certain health related behaviour which might

bring beneficial changes. Realizing that one is the object of prayer is said to stimulate the immuno-endocrinological system; in fact, both psychophysiology and psycho-neuroimmunology have demonstrated the impact of feelings and emotions (Ader et al, 1991). It has also been postulated that there are unutilized energies which are activated by religious involvement which are capable of influencing the course of illness. This can explain the findings of a famous study (Byrd, 1988) which showed through double blinding, how a group of coronary care unit patients improved under the effect of prayer.

Other explanations include empathic connection between the healer and the sufferer which brings about the changes, violating the biomedical conceptions of physical law (Levin, 1996). According to Sheldrake's (1981) theory of modified materialism, morphic fields exist as vibration or information within nature and thus constitute a type of protosubstance which manifests more subtly than normal three-dimensional matter. The operation of such a supernatural healing effect can be characterized as non local in both space and time. From the available evidence, the most parsimonious explanation for why people are healed after praying is that there is in fact a transcendent God who supernaturally heals. Ultimately, the existence of a transcendent God who bestows supernatural blessings of healing cannot be proven by science; it is a matter of faith (Levin, 1996).

IS MAGIC RESTRICTED TO SPECIFIC CULTURES?

Majority of the available literature on magic seems to reiterate the fact that magic is restricted to specific subcultures, being demarcated by distinct geographical and sociocultural boundaries. But is it really so? In his famous book "Primitive Culture" (1889), Tylor wrote of magic as a cultural 'survival'. Very wisely-even prophetically-he traced magical practices, from "the lower culture which they are of to the higher culture which they are in". Tylor mentioned a surviving European equivalent for every form of symbolic magic. Divining with animal bones, common in Polynesian and Malays, is also rampant in Ireland and England; magical thought is shared by the "negro fetish man" and the "modern clairvoyant"; palmistry, which was prevalent in ancient Greece and Rome as it still does in India, "has its modern votaries not merely among gypsy fortune tellers but in what is called 'good society' ".

While many prominent scholars have worked to stigmatize and condemn magical thinking, they have been barely successful. Occultism, astrology and various forms of supernaturalism have all become closely knit with modern culture. In his book "Modern Enchantments" (2004), Simon During talks about 'secular magic' i.e., commercial magical entertainment and literature making no claim to involve supernatural powers. For example, modern advertising can be taken as an instance of modern black magic. By drawing on the human will to fantasy, advertising transfigures utilitarian objects (car, washing machine) into signs of social identities that may be more ordinarily available under socialism.

IS MAGIC A TOOL FOR SOCIAL CONTROL?

In social scientific literature of the late 19th and early 20th centuries, magic was seen as a definite characteristic of the 'primitive' mentality. Magical thinking was viewed as the prime index of the non-modern and the non-Western. This legacy is still being carried on by contemporary Western anthropologists in the garb of "scholarly analysis of magic". The principal elements in the study of magic are still today being drawn from anthropological studies of non-Western cultures.

These theories serve through much of the past century as an important ideological tool in the aid of European and American imperialism and colonialism (Styers, 2004). A propensity for magic demonstrates an incapacity for responsible self-government. Apart form colonial ambitions, the spread of Christianity has also been a motive of Euro-American nations. Here again Christianity was portrayed as "the rational religion" by Western scholars. Animism was suspect in religions of monotheistic persuasions. Overzealous philosophers like Frank Byron and Hutton Webster went one step further to conclude that to expose the "silly magic" of the "backward" cultures was an appropriate Christian duty. Thus, scholarly initiatives into magic and their contemptuous outlook of non-Western cultures gave the much needed sanction of rationality to their colonial ambition (Styers, 2004).

THE ADAPTIVE VALUE OF MAGIC

While modern scientific era is cynical about the fact that beliefs in magical phenomena, superstition and paranormal are still rampant in society, developmental psychologists have shown that such beliefs are outcome of normal intuitive reasoning in

humans. Hence, it exists side-by-side with rational and scientific thought. Moreover, its persistence also points to the fact that such thoughts may serve several adaptive functions for humans.

Belief in the supernatural is the byproduct of a mind that infers the existence of patterns, forces, and essences that do not exist in reality, as we ordinarily know it. It is precisely this thought process that has also been responsible for creativity. Supernatural beliefs also give us a perception of control in situations where actually we may have none. Human beings also repeat behaviors that they believe may affect positive and negative outcomes, even when there is no actual relationship between the behavior and its result. Every superstitious sportsman knows how important it is to his performance to indulge in a special ritual and or wear a lucky talisman before a crucial match. This behaviour is self-reinforcing, because people who are thwarted in performing the superstitious activities become more stressed, thereby affecting their ability to perform optimally. In early psychophysiological studies of the effects of stress in the 1970s, researchers learned that both animals and human beings needed the perception of control, even if illusory, to make stressful events less stressful.

Most important, a belief in the supernatural can give people a deep sense of connection with the past and with each other. Such beliefs impart a consideration of the possibility that the mind will outlive the body. They are common to a variety of religions, but even atheists can benefit from a sense of the supernatural if belief in a deeper reality to existence shields them from facing the existentialist crisis of thinking that life has no purpose or meaning. Finally, we must recognize that science, too, can benefit from a leap into the unknown by looking for structures and mechanisms in the universe that underlie the fabric of reality (Hood, 2006).

CONCLUSION

Magic, since the earliest days of mankind, has cast its spell on human culture and behavior. Scholars from varying fields-anthropology, sociology and psychology-have made serious attempts to study magic across cultures. Their efforts have served diverse purposes: a better understanding of diversity of human race and culture on one hand and social dominance of "rational" Western culture through portrayal of magic as "the bastard sister of science" on the other hand. Nonetheless, magic has-one is tempted to say-"magically" managed to percolate through the most modern and scientifically advanced civilizations and to have survived massive rationalist onslaught on it across centuries. Balter (2002) provides us one possible explanation for this: The assured and certain feeling of optimism generated directly or indirectly by the aura of magic actually helps practical, knowledgeable people overcome the external obstacles and internal inhibitions that impede their realistic endeavors.

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Indian Journal of Social Psychiatry (2009), 25(1-2), 17 - 28.

Research Articles

DEVELOPMENT AND STANDARDIZATION OF LIFE SKILLS SCALE

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ABSTRACT

The aim of this research was to develop and standardize a scale to assess life skills among adolescents. Test-test reliability, internal consistency reliability, construct aspect of content validity, item validity, discriminant and concurrent validity of the final 115-item Life Skills Scale was found to be highly adequate. The implications of the new scale in the context of enhancement of psychosocial competencies among adolescents are discussed.

Key Words: *Life skills scale, standardization, validity, reliability, adolescents*

INTRODUCTION

In any society, rapid change in social, moral, ethical and religious values demand changes in the life style of individuals. Such changes are inevitable and adolescents are most affected by these changes. Moreover, these changes interfere with physical, psychological and social health of adolescents, resulting in exposure to high-risk behaviours. To overcome such difficulties, the adolescents need to acquire life skills. Indian youth represent a significant proportion of the worldwide population. It was estimated that young people below 20 years of age account for 40% of the world's population, while 80% are living in the developing countries (WHO-SEARO, 2000).

The stress faced by the adolescents in current situation is enormous. Research studies show that various psychosocial factors and life skills deficits are the mediating factors resulting in behavioural, psychological and health related problems among adolescents. Low self-esteem, poor communication skills, poor problem solving skills, poor decision making skills and lack of assertiveness were found to be linked with delinquency (Duckes & Lorch, 1989), school dropouts (Cairns et al, 1989), smoking and drug abuse (Kumfer & Turner, 1990; Singh & Mustapha, 1994), teenage pregnancies (Keddie, 1992; Plotnick , 1992), suicidal thoughts (Choquet et al, 1993) and health problems (Bye & Jussim, 1993). Enhancement of psychosocial competencies or life skills is must for adolescents for a healthy transition to adulthood (Vranda & Chandrasekhar-Rao, 2007). Hence, there is an urgent need to provide a set of skills for today's children and adolescents. The adolescents need to learn how to set goals, prioritize their needs and balance their lives (Elias et al, 1991). The following section discusses the concept of life skills, its measurement, some of the lacuna in existing measures and a need for developing a life skills scale specific to the Indian setup.

LIFE SKILLS

Over the last decade there has been an increased interest among mental health professionals in the area of life skills. Life skills are defined as 'abilities for adaptive and positive behaviour that enables individuals to deal effectively with the demands and challenges of every day life' (WHO, 1993). Life skills are innumerable; some are specific to certain risk situation and others are generic in nature. Further, life skills were summarized to represent a set of ten generic life skills, based on various developmental theories and interventional studies from various sources. These skills include decision-making, problem solving, empathy, self-awareness, communication, interpersonal relationship, coping with

Accepted on 13th May, 2009

emotions, coping with stress, creative thinking and critical thinking. The research in the area of life skills has frequently utilized the concepts such as emotional intelligence, social competence and social skills. These are synonymous concepts reflective of life skills where there is a great overlap among these constructs. However, these concepts tap similar constructs and are related to the concept of life skills. Social skills focuses more on interpersonal skills whereas social competence focuses more on observable behaviours of individual in social context i.e., on situation specific skills that an individual need to possess in order to have desired outcomes. In case of emotional intelligence the skills focus more on interpersonal skills (i.e., self-awareness in understanding feelings, managing emotions, empathy, managing relationships etc.) and intrapersonal skills (i.e., self-motivation, taking responsibility). The above concepts differ in focus and specificity, but a common theme can be derived. By comparison with various concepts, life skills reflect a more encompassing aspect of human functioning. The varied dimensions of skills identified are more generic in nature, which can be applied across the life span for successful living (Lewis & Lewis, 1989). These skills are basic to every culture and can be used for promotion of psychosocial competencies among children and adolescents.

The research in any field is largely dependent on measuring instruments. A valid and reliable tool to assess various aspects of study enhances the value of research. One of the main problems in this area of research is lack of valid and reliable instrument for measuring life skills (Boyd et al, 1992; Gray & Patterson, 1994; Hattie et al, 1997). There are several scales available to assess a specific life skill of adolescents. Some of these scales are Decision Making Confidence Scale (DMCS) (Wills, 1986), Social Problem Solving Inventory (SPSI) (Frauenknecht & Black, 1995), Social Skills Rating System (SSRS) (Gresham & Elliot, 1990), Bar-On Emotional Quotient Inventory (Bar-On & Parker, 2000). However, these scales are meant to measure either one or few domains of life skills mentioned above rather than measuring all the life skills together. Secondly, very few scales are available that exclusively measure a cluster of life skills among adolescents such as Youth Leadership Life Skills Development Scale (YLLSDS) (Seveers et al, 1995), Life Skills Development Inventory-College Form (LSDI-CF) (Picklesimer & Miller, 1998) and National Youth Life Skills Evaluation Scale (NYLSES) (Mincemoyer & Perkins, 2005). However, these scales are of western origin and are appropriate for western cultural background. There is no comprehensive scale in Indian setting covering all the life skills for measuring either the skills or acquisition of skills after the life skills intervention over a period of time (Jessy, 1998; Michael, 2000). To study or explore the impact of life skills intervention there is a need for a scale covering all generic life skills proposed by WHO (1993). The present study was part of a doctoral research work carried out with the aim for development and standardization of life skills scale for adolescents in the Indian context. The objectives of this study were to construct a comprehensive scale for assessing life skills among the adolescents, select and test the measurability of items in the life skills scale and examine the reliability and validity of the life skills scale.

METHODS

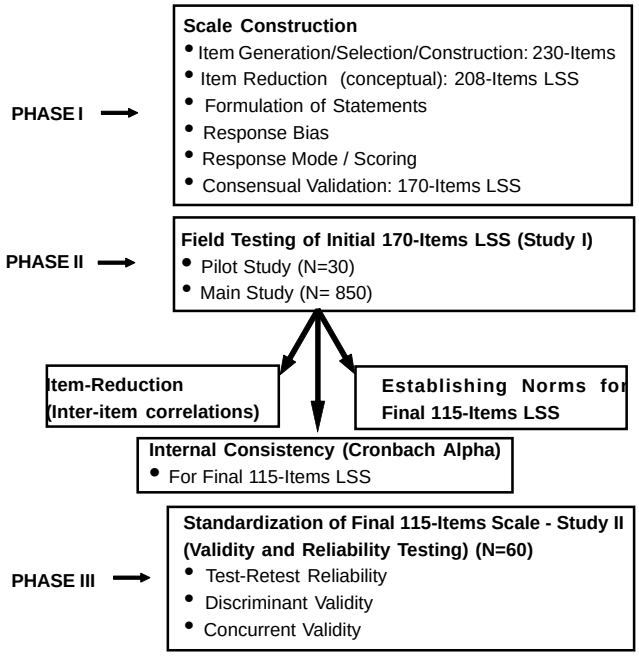
Instrument Development Procedure

The methods and steps followed in the process (Fig.1) of developing the scale are discussed comprehensively, based on theoretical background on scale construction under the following three phases:

Phase I: Scale Construction, Item-Development and Initial Item Reduction

The first step in scale construction procedure involved identification of the universe of item pool for the scale (Nunnally, 1978; Messick, 1980). A focussed group discussion was conducted to generate developmentally appropriate, culture specific items for the current Life Skills Scale. A focus group was constituted with six experts having rich experience in the field of life skills. The experts were asked to identify developmentally appropriate items for the measurement of each of the ten life skills under the study. The actual verbatim

Fig. 1: Process of Scale Development, Testing & Item Reduction for Life Skills Scale (LSS)



of the discussion was recorded and later subjected to content analysis. A total of 230 items were generated by the experts formed the initial item pool for the life skills scale.

Item reduction was carried out by the researcher for the initial item universe of 230 items, grouped under the ten dimensions of life skills. All the items were carefully examined to eliminate repeatability and overlapping, care was also taken to eliminate ambiguous or vague items. This resulted in reduction of 230 items to 208 items for the initial life skills scale. A uniform scoring format was adopted for all the items for administration of the scale. All the items were prepared in the form of statements using the first person.

Minimizing the response set bias is crucial in the scale development. Cronbach (1950) reported that response set bias is the 'Enemy of Validity'. In the current scale construction, an attempt was made to keep an equal number of positively and negatively worded items in the scale as much as possible. The social desirability bias was controlled to the extent possible by assuring subject's anonymity, confidentiality and also by careful wording of the statements. This was done to ensure that no indication was given to the students as to what is a good or a bad response and no clues were provided to imply the mode of evaluation of the responses. The carelessness and cautiousness bias was controlled for the present scale by providing written instructions as well verbal instructions to ensure that the students respond candidly and honestly while completing the current Life Skills Scale (LSS). Adequate time was provided to complete the scale to reduce tendency to work speedily. Evasiveness was controlled while considering the response mode of the items. Instead of considering fixed response categories, the researcher considered multiple response categories to reduce the response set variance.

For the current Life Skills Scale the Likert technique of 5-point scale was chosen as it was reported to be consistently superior to Thurstone's dichotomous method of scoring (Zyzanski et al, 1974). It is a measure of intensity and extremity of direction (DeVaus, 2003). It also reduces response sets variance due to acquiescence and evasiveness (Mosier & Prince, 1945; Singh, 1997). The response alternatives for each of the item for the current Life Skills Scale (LSS) are: Never, Rarely, Sometimes, Usually and Always. The scoring of the items ranged from 1 to 5, positively worded statements are scored 1, 2, 3, 4 and 5 for the responses never, rarely, sometimes, usually and always, respectively and negatively worded item being scored in reverse order i.e., 5, 4, 3, 2 and 1 for the same respectively.

Consensual Validation: The initial 208- items were evaluated independently by six judges for consensual validation. The judges were asked to validate each of the items for a) cultural relevance b) clarity c) easy comprehendability of the items by the target population d) readability e) suitability for 5-point rating format and f) representativeness of items in each domains of the scale and in case if the items did not represent the particular domain then the judges were asked to indicate the domain that it reflected out of nine life skills. The responses of all the judges for every item were scrutinized. Those items, which were completely agreed by three or more judges, were retained in the scale. Consequently 38-items were discarded

from the instrument. Thus, 170-items were derived for further field-testing. The170-items scale was translated to Kannada, and back translated by another independent translator to verify that the Kannada version of the items were linguistically equivalent.

A pilot study was carried with initial 170-items Life Skills Scale (LSS) on 30 students belonging to Kannada and English medium drawn from a high school from Bangalore city. The aim of the pilot study was to check the difficulty in administration of the scale related to the student's ability to comprehend the instructions and items of the scale and to find out any difficulty in choosing response categories. The scale was administered individually on the subjects. Modifications were made in few of the sentences with consultation from expert judges. For example the sentence 'I put off decision making' was rephrased as 'I postpone making decisions whenever possible' considering the linguistic and cultural appropriateness to the Indian settings. Thus, the pilot study resulted in modifications of few of the items to facilitate the readability and comprehensibility of the subject. The mean time taken for completion of scale was found to be ninety minutes.

Phase II: Field Testing of Scale (Study I)

Sampling: Large sample size always provides sound methodological foundation for construction of the scale. The sample size for the field-testing study I was based on Subjects to Variables Ratio of 5:1 (five subjects per variable) as suggested by Streiner (1994) and Bryant and Yarnold (1995). As there were 170-items in the present scale, using Subjects to Variable Ratio of 5:1 (i.e., 5 subjects x 170 variables/items), a sample of 850 subjects was derived from 10 secondary high schools situated within the Bangalore city. Overall there were 3030 students in 8th, 9th and 10th standards from 10 schools. Further, 850 students were drawn using simple random sampling technique. Approximately equal representation of boys and girls were included in the sample.

Main Study: The initial 170-items LSS was field tested to examine the measurability of the instrument. It was also carried out with the purpose to further reduce the items in a meaningful manner and establish the norms for the final interpretation of the scores of scale.

RESULTS

a) Demographic Characteristics

The socio-demographic profile of the students (Table-1) revealed that 50.9% students were girls and 49.1% were boys. The mean age was 14.11 years (SD=0.85), the students age ranged from 13-16 years, and significant number (36.2%) were around of 15 years of age. Majority (83.3%) of the students were Hindu. With regard to the family types, 74.9% of the students were from nuclear families. More than two third (69.4%) of the students were from Kannada medium and around one third (30.6%) of the students were studying in English medium. With regard to standard of study, 34.1% of the students were from 10th standard, 33.4 were from 8th standard and remaining 32.5% were from 9th standard.

Table 1: Socio-Demographic Characteristics of Student

Socio Demographic Variables	Frequency(N=850)	Percentage
Sex		
Boys	417	49.1
Girls	433	50.9
Age		
13 years	251	29.5
14 years	272	32.0
15 years	308	36.2
16 years	19	2.3
Religion		
Hindu	708	83.3
Muslim	116	13.6
Christian	26	3.1
Family Type		
Nuclear Family	637	74.9
Non - Nuclear Family	213	25.1
Medium of Study		
Kannada	590	69.4
English	260	30.6
Standard of Study		
8th Standard	284	33.4
9th Standard	276	32.5
10th Standard	290	34.1

Mean Age = 14.11; S.D = 0.85

b) Item Level Analyses-Item Reduction

The data obtained from the sample (N= 850) on the initial 170-items LSS were carefully examined to further reduce the larger number of items in a meaningful size. The primary purpose of item reduction was to examine the pattern of responses on items, and increase the reliability of the scale. In the process of standardization, an attempt was made to use empirical means to eliminate or discard the excess items from each of dimension to improve the reliability of the scale. Inter-item correlation matrices were prepared for each dimension for item reduction using scores of the subjects. Each correlation matrix was examined to find out the number of items, which had highest significant correlation with a given item. The items were arranged in a descending order starting from highest to lowest number of correlations. Each correlation matrix was examined separately and number of items which had significant correlations with a given items were listed. The items were scrutinized for their significance at p<0.01 level. Only those items which had highest inter-correlations with at least half of the items within dimension, were retained. Based on this procedure 55 items were discarded from the original scale. This technique provided empirical evidence to the 'item validity' for each of the dimension. The final scale consisted of 115-items (Appendix A).

c) Descriptive Statistics of Final 115-item Life Skills Scale

Table 2: Mean and Standard Deviation of Final 115-Items Life Skills Scale

Dimension of Life Skills Scale	Range of Scores (N= 850)			
	Mean	SD	Min.	Max.
Decision Making Skills	35.89	5.61	14	49
Problem Solving Skills	46.69	7.11	23	65
Empathy	45.23	6.99	21	60
Self-awareness	38.34	5.69	20	50
Communication Skills	35.62	5.13	21	50
Interpersonal Relationship Skills	68.99	9.14	42	89
Coping with Emotions	31.59	5.89	12	45
Coping with Stress	30.65	4.51	14	44
Creative Thinking Skills	50.05	7.89	27	70
Critical Thinking Skills	37.17	6.12	17	50
Overall Scale - LSS Total	420.16	47.18	284	544

The mean scores, standard deviations, minimum and maximum scores in each dimension of final 115-items LSS are shown in Table-2. The total scores obtained here were from the sample of 850 subjects. The minimum and maximum scores obtained for the overall scale were 284 and 544 respectively. The overall mean score was 420.16 (SD=47.18).

d) Life Skills Scores and Gender Differences

The extent of life skills scores among the boys and girls (Table-3) revealed that girls scored significantly higher than boys on decision-making skills (p<0.05), problem-solving skills (p<0.05), communication skills (p<0.05), empathy (p<0.05), interpersonal relationship skills (p<0.01), coping with stress (p<0.05) and critical thinking skills (p<0.05) dimension. Significant difference (p<0.001) was also found on the total scores in which girls scored higher (Mean=425.57; SD= 49.51) than boys (Mean=414.55; SD=43.98).

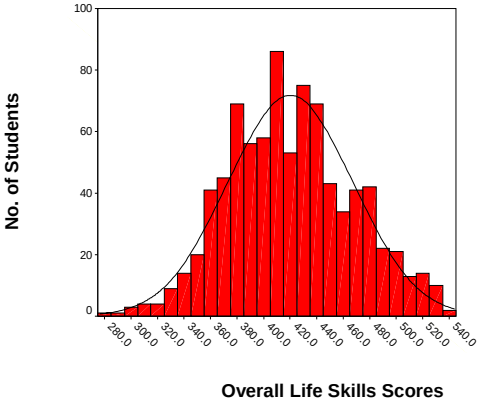
Table 3: Life Skills and Gender

Dimension of Life Skills Scale	Boys (N = 417) Mean+SD	Girls (N= 433) Mean+SD	't' values df=848
Decision Making Skills	34.99+5.54	36.75+5.56	4.637*
Problem Solving Skills	46.06+6.97	47.30+7.21	2.554*
Empathy	44.13+7.17	46.26+6.57	4.523*
Self-awareness	38.23+5.58	38.45+5.81	0.587
Communication Skills	35.16+5.16	36.06+5.06	2.578*
Interpersonal Relationship Skills	67.68+9.19	70.24+8.93	4.122**
Coping with Emotions	31.86+5.46	31.25+6.25	1.533
Coping with Stress	30.14+4.19	31.14+4.75	3.249*
Creative Thinking Skills	49.79+7.34	50.31+8.25	0.977
Critical Thinking Skills	36.52+5.87	37.80+6.29	3.070*
Overall Scale - LSS Total	414.55+43.98	425.57+49.51	3.433***

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

e) Test of Normality of Distribution

Figure -2: Normal Distribution Scores of Final 115-Items LSS



The normative data (N=850) was subjected to One-Sample Kolmogorov-Smirnov Test to examine the normality distribution of scores. The non-significant test results (p=0.170) indicated that the data was normally distributed. The normal distribution of overall scores of the students on final 115-items Life Skills Scale is shown in Figure-2.

f) Norms of Final 115-item Life Skills Scale

The total items in the scale are 115. Each item was measured on a 5-point scale on 1 (Never) to 5 (Always). Thus, the possible minimum score is 115 and maximum score is 575. Based on the scores obtained from 850 subjects, 3 levels of life skills scores have been obtained. Percentile scores were computed to derive 3 range of cut off scores for the overall 115-items scale. At the 33rd percentile the score was 397 and at 66th percentile the score was 437. Thus, the three levels of score can be summarized as follows:

Less than 397	-	Low Life Skills
398 - 437	-	Moderate Life Skills
438 and above	-	High Life Skills

Table 4: Life Skills among Non-Institutionalized and Institutionalized Adolescents

Dimension of Life Skills Scale	Non - Insti. Adolescents (N = 30) Mean+SD	Insti. Adolescents (N= 30) Mean+SD	't' values df=58
Decision Making Skills	41.27±3.89	29.10±9.05	6.769***
Problem Solving Skills	54.83±6.01	41.67±9.92	6.216***
Empathy	51.73±5.98	43.03±10.87	3.841***
Self-awareness	44.00±3.95	34.27±6.53	6.988***
Communication Skills	41.67±4.85	35.87±5.64	4.269***
Interpersonal Relationship Skills	80.20±6.42	67.07±11.58	5.430***
Coping with Emotions	38.40±3.93	30.43±7.37	5.228***
Coping with Stress	35.93±3.93	30.13±4.98	5.007***
Creative Thinking	58.97±6.82	51.33±7.01	4.277***
Critical Thinking	41.97±4.77	30.63±9.02	6.087***
Overall Scale - LSS Total	488.97±38.21	393.53±61.60	7.212***

***p= <0.001

g) Internal Consistency: Cronbach's Alpha (N=850)

The internal consistency reliabilities were assessed as a measure of item homogeneity. The internal consistency Cronbach's alpha coefficients (Table-5) were lowest for coping with stress (0.55), decision-making skills (0.56) and coping with emotions skills (0.59), and highest for creative thinking skills (0.77), problem-solving skills (0.72), and empathy skills (0.71). The alpha coefficients of interpersonal relationships skills (0.69), critical thinking skills (0.65), self-awareness (0.61) and communication skills (0.60) were within the range of moderate level.

The overall alpha value of 0.96 indicated excellent internal consistency of the scale. Different levels of alpha are considered adequate by different authors. Kline (1986) suggested a minimum value of 0.60 whereas Nunnally (1978) suggested a minimum criterion value of 0.70 sufficient for a new measure. On the whole the test results of the present scale revealed that the internal consistency alpha values of majority (70%) of the domains of the scale were within acceptable minimum standard of 0.60 (Kline 1986).

Phase III: Standardization of Final 115-Items Life Skills Scale -Validity and Reliability Testing (Study II)

Validity: It was found in the literature that while standardizing scales various approaches have been reported to establish the validity of the scale. Most frequently used approaches are content validity, construct validity (i.e., convergent validity, discriminant validity and factorial validity) and criterion-related validity (i.e., concurrent validity and predictive validity). The use of these approaches does not imply that there are distinct types of validity or that a specific validation procedure is best for one test and not another. An ideal validation includes several types of evidence, which span through all the three categories. Other things being equal, more source of evidence is better than fewer. However, the quality of the evidence is of primary importance, and a single line of solid evidence is preferable to numerous lines of evidence of questionable quality. For the current life skills scale two types of construct aspect of discriminant validity as well concurrent validity were established. Moreover, the evidence of content validity as well as item validity has already been established in the initial

stage of scale development for the present LSS. The procedure followed for establishing construct aspect of discriminant validity and concurrent validity are given below: ***Sampling:*** Having done the field testing of scale with larger samples in Phase II, the final 115-items life skills scale was tested on a total sample of 60 subjects, 30 each adolescents from institutionalized setting and non-institutionalized setting derived using simple random sampling technique. For institutionalized setting the sample was derived from Government Home for boys and Government Home for girls and for non-institutionalized setting the sample was derived from a Government High School. The two samples were ensured for group matching with respect to gender, age and medium of study.

Results: 1a) ***Discriminant Validity:*** The final 115-items LSS was administered to 30 institutionalized adolescents and 30 non- institutionalized adolescents to establish the discriminant validity based on the theoretical constructs. It was hypothesized that institutionalized adolescents would score less as compared to non- institutionalized adolescents on final LSS. The analysis of the scores of two groups shows (Table-4) that the institutionalized adolescents scored significantly low ($p<0.001$) on all the domains of LSS as compared to non-institutionalized adolescents. This is more pronounced with regard to self-awareness skills ($p<0.001$); interpersonal relationships ($p<0.001$); coping with emotions ($p<0.001$); and decision making skills ($p<0 .001$).

1b) ***Concurrent Validity:*** Concurrent validity examines the relationship of instrument with an outside criterion. Good concurrent validity indicated by good 'agreement' between a questionnaire's, sub (scale), or item score and another 'external' sub (scale) or items score measuring same construct in the same units of measurement (Nunnally & Bernstein 1994). Concurrent validity of the present scale was established on same 30 non-institutionalized adolescents by comparing the scores of present Life Skills Scale (LSS) with another Life Skills Development Scale (LSDS)-A (Darden et al, 1996) which consisted of 65-items with 4 subscales: Problem Solving/Decision Making (PS/DS), Interpersonal Communication/Human Relations (IPC/HR), Physical Fitness/Health Maintenance Skills (PF/HMS) and Identity Development/Purpose in Life Skills (ID/PLS).

The results of Pearson product-moment correlation revealed that overall score of LSS was moderately correlated ($r=0.507$, $p<0.01$) with total score of LSDS-A. The dimensions of LSS such as, Problem Solving Skills and Decision Making Skills, Interpersonal Relationships Skills and Self-Awareness were moderately correlated with LSDS-A dimensions of Problem Solving/Decision Making Skills ($r=0.597$, $p<0.01$), Interpersonal Communication/Human Relationships Skills ($r=0.368$, $p<0.05$) and Identity Development / Purpose in Life Skills ($r = 0.414$, $p< 0.05$). The Coping with Stress dimension of present LSS was negatively correlated with Physical Fitness/Health Maintenance subscale of LSDS-A. The reasons for non-significant correlation could be that few of the items in the physical fitness/health maintenance subscale assess stress management skills and rest of the items measures health maintenance skills in general. Significant correlation ($r=0.507$, $p<0.01$) was found between overall scores of two scales. The overall score shows moderate positive correlation between the instruments suggesting that both the instruments measure somewhat similar constructs. However, the results should not be misconstrued to mean that the two measures are redundant. The LSDS-A is a more limited and narrow measure of life skills compared to the present Life Skills Scale, which is multi-dimensional in nature.

2) **Reliability:** Measurement of reliability is another important part of standardization process of scale. Two types of reliability were established for the present scale. The internal consistency Cronbach's alpha has already been established based on the data of field-testing study. Apart from this test retest reliability coefficients were calculated using following procedure,

Test Retest Reliability: The final 115-items scale was administered after 2 weeks interval on the sample of 30 non-institutionalized adolescents considered from Phase III sample for establishing the test retest reliability of the scale.

RESULTS

The two weeks test-retest reliabilities coefficients for final 115-items LSS ranged from 0.70 to 0.95. The coefficient of reliability for overall scale was 0.96 indicating high temporal stability of the scale (Table-5).

Table 5: Internal Consistency Cronbach's alpha and Test-Retest Coefficients of Final 115-Items Life Skills Scale

Dimension of Life Skills Scale	Internal Consistency Cronbach's Alpha (N=850)	Test-Retest Coefficients (r) (N=30)
Decision Making Skills	0.56	0.85
Problem Solving Skills	0.72	0.88
Empathy	0.71	0.84
Self-awareness	0.61	0.82
Communication Skills	0.60	0.87
Interpersonal Relationship Skills	0.69	0.83
Coping with Emotions	0.59	0.70
Coping with Stress	0.55	0.76
Creative Thinking	0.77	0.95
Critical Thinking	0.65	0.81
Overall Scale - LSS Total	0.96	0.96

DISCUSSION

The purpose of this multiphasic study was to standardize a scale to assess the level of life skills among adolescents. The initial psychometric properties suggest that the Life Skills Scale is a potentially reliable and valid measure of assessing life skills among adolescents. The girls reported significantly higher life skills as compared to boys. The results of the current findings are similar with previous studies which reported that girls differed significantly from boys on various domains of life skills or social skills (Matson et al, 1983; Spence & Liddle, 1990; Picklesimer & Millller, 1998; Wolfradt et al, 2002). The findings supported the theoretical underpinnings that girls mature socially and psychologically more rapidly than boys (Havighurst, 1972) and these differences tend to persist through out the college years (Rice, 1999; Darden et al, 1996).

Although the scale was based on sound theoretical background, few limitations need to be considered. Firstly, in view of the fact that the sample size of the study was quite large, even though the internal consistency alpha values for few domains are low, they may still be considered significant as the alpha coefficient of overall scale revealed high degree of internal consistency among the items (Cronbach, 1951). The possible reason for low internal consistency could be that the scale was administered to the sample of Kannada and English medium students, wherein it is possible that the limitation in comprehension ability of the English medium could have influenced the internal consistency of the scale with regard to certain items. Secondly, the 115-items scale is fairly long which demands greater time and efforts on the part of the subjects to complete the form. Thirdly, the sample size used for establishing the validity of the scale was small; it was done mainly due to limited availability of time and resources. Nevertheless, significant findings on comparison of institutionalized and non-institutionalized adolescents emphasize the need for strengthening the life skills among the inmates of institutionalized adolescents. This established the utility of the scale. The present scale could be used to assess the strength and deficits in life skills among inmates and plan for appropriate intervention program to enable better adjustment of institutionalized adolescents (English et al, 1994; Cook, 1994). Fourthly, the researcher initially felt not to include the subjects in the item development phase due to their limited ability to identify the items for the scale. However, on completion of entire exercise the researcher feels the step would have been worthwhile.

Finally, the mental health professionals who are working with adolescents can use present scale to assess the overall life skills or specific skills of adolescents and plan for developmentally appropriate life skills intervention program. They can also use the present scale to monitor and evaluate the effectiveness of life skills training in terms of acquisitions of life skills over a period of time.

CONCLUSION

Measurement of life skills is an essential tool required by interventional and non-interventional researchers. In this research a comprehensive measure of life skills among adolescents was systematically developed. The psychometric properties of the present life skills scale (LSS) found to have good test-retest reliability and internal consistency reliability.

The scale also established good content validity; construct aspect discriminant validity and concurrent validity. However, in future the research needs to be conducted to establish utility of the scale. Additional support for the uniqueness of the scale can be obtained with other related but relatively distinct constructs. Predictive validity also need to be established by examining the relationship between the life skills with other measures such high-risk behaviors, behavioural problems, social adjustment, self-esteem, psychological well-being and academic achievement.

We can hope that replication of similar studies and continuous use of the scale for intervention studies in the area of life skills education would establish further utility of the scale with different population.

Acknowledgements*: This study is a part of the author's Ph.D research work. The author wishes to gratefully acknowledge Late Dr. M. Chandrasekhar Rao, Additional Professor, Department of Psychiatric Social Work, NIMHANS for his guidance in this scholarly work. The author also wish to acknowledge Dr. Subbakrishna D. K., Professor and Head of Biostatistics and Dr. Mariyamma, Scientific Research Officer, Department of Biostatistics, NIMHANS, Bangalore, for their technical help in statistical analysis.*

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Appendix - A: Life Skills Scale

		SCORING
1.	I am aware of my good qualities.	N R S U A
2.	I look at people when they are speaking to me.	
3.	I co-operate well when working in a team.	
4.	I can recognize early signs of tension build up in my body.	
5.	* I pretend to listen even if my mind drifts away, while conversing.	
6.	I do positive thinking to cope with my negative feelings.	
7.	Before coming to a conclusion about anything I examine it in an objective way.	
8.	I show my reaction to the other person by nodding when I am listening.	
9.	I have control over my emotions.	
10.	I can consider new ideas when things go wrong.	
11.	I ask for proof before I can believe any information.	
12.	* I am unaware my likes and dislikes.	
13.	I get the help from friends/family members, when I face difficulties in solving my problem.	
14.	I am responsible for my decision whether the outcomes are good or bad.	
15.	In stressful situations, I am optimistic about the situation and see myself in a positive way.	
16.	When I meet a new friend, I introduce myself and speak first.	
17.	Before I select a suitable solution, I examine all possible outcomes of the various alternative solutions for a problem.	
18.	I search for evidence from various sources before I believe any information from my friends.	
19.	I believe every problem has solutions, one need to make efforts to solve it.	
20.	* I get into fights with friends, while working together.	
21.	* I interrupt when the other person is speaking, if I have something relevant to say.	
22.	I can describe myself accurately.	
23.	* I assume things rather than thinking practically about them.	
24.	During stress, I relax myself by doing pleasurable activities like listening to music, reading a book, playing a musical instrument, watching television etc.	
25.	* The way I express my anger either hurts me or somebody.	
26.	* I feel nothing when my friend is disappointed.	
27.	I make attempts to solve a problem successfully.	
28.	I keep many choices while making a decision.	
29.	I know myself better than what others know me as a person.	
30.	I have good relationships with my family members.	
31.	In stressful situations, I can calm myself down by sitting quietly and breathing slowly.	
32.	I examine the risk involved in any action before doing it, even if my friends strongly suggest it.	
33.	I can easily recognize my feelings as I experience them.	
34.	I am active thinker I have lots of ideas.	
35.	I examine the possible good and bad results of each choice while making a decision.	
36.	* I find it difficult to put across my ideas and views with others.	
37.	* I ignore when I hurt someone.	
38.	* I see a problem as a threat rather than challenge in my life.	
39.	I have good relationship with everyone.	
40.	I have clear vision of what I want in life.	
41.	I can recognize others' feelings just by looking at their facial expression.	
42.	I am confident in my ability to come up with innovative ideas.	
43.	When compared to others my coping ability is excellent.	
44.	I am able to think practically and express my own thought with others.	
45.	I challenge others when they make impossible claims.	
46.	* I go along with what others' suggest, while making a decision.	
47.	I am aware of methods to control stress.	
48.	I think about new ways to do my routine work rather than doing them in accepted ways.	
49.	I can make new friends easily.	
50.	I know my personal values and it guides me when I do things.	
51.	I comfort my friends when they are in distress.	
52.	When I have a problem, I try to understand exactly what the problem is.	
53.	Before I make a decision, I consider how my decision will affect me and others.	
54.	I prefer to make decisions myself rather than allowing others to make decisions for me.	
55.	I know what I can do.	
56.	* I worry about what will happen to me in times of stress.	
57.	I can classify any information as right or wrong after considering relevant facts.	
58.	I know how to end friendships when necessary.	
59.	* I am unable to say 'NO' to my friends if they suggest me to do the bad things.	
60.	I can be imaginative in my thinking.	
61.	I am aware that bad feelings (sadness, fear, anger) have an effect on physical and mental health.	
62.	* I feel that I am not good at making decision.	
63.	It hurts to see another person in pain.	
64.	I look at people when I talk to them.	
65.	I focus my efforts on things that I can do.	
66.	I collect as many details about a problem as possible before I begin to solve a problem.	
67.	I am aware that different people express their feelings in different ways.	
68.	I think carefully before making any decisions.	

69. * I depend on my inner feelings while making a decision.
70. I am willing to do the work assigned by a team in which I am a member.
71. * I feel right and happy when I see a classmate being punished by a teacher.
72. I think carefully before taking any steps / action to solve problems in time of crisis.
73. I am very curious in seeing relationship between things.
74. I collect information needed before making any decisions.
75. I do self-talk to remove fear or sadness.
76. I think of as many ways as possible to solve a problem before I deal with the problem.
77. * I find it difficult to interact with members of opposite sex.
78. I like to observe things around me.
79. I feel concerned with those who are worried.
80. I check to clarify whether my friends understand me or not, when I discuss with them.
81. I can grasp others' ideas quickly and see it from different angles.
82. I have feelings of concern for people who are disabled.
83. * I ignore when I see someone being ill treated.
84. I first carefully understand what other person is saying before I respond.
85. I consider how my problems affect me and others while solving it.
86. I trust my friends.
87. I can introduce different ideas in games or during plays while being with a group.
88. I do my work differently from others.
89. * I make a decision suddenly without thinking about its results.
90. I trust my ability to solve problems.
91. * I feel jealous when somebody praises my friend in front of me.
92. * When I am faced with a problem, I pretend as if the problem does not exist instead of solving it.
93. I am aware of my bad qualities.
94. * I find it difficult to work in a team where I feel like an outsider.
95. * I fail to review the outcome after solving a problem.
96. I get upset, when I see helpless old people in public places.
97. I talk to friends when I am stressed.
98. I think about what I am going to say before I speak.
99. I am confident of solving any kind of problem.
100. I like to do challenging things.
101. Before I criticize my friends/ anybody, I try to imagine how I would feel in their place.
102. I am able to maintain meaningful relationship with opposite sex.
103. * When I am upset I tend to make others also upset.
104. I simply like to guess 'what will happen'.
105. * I get irritated than concerned when I see someone in tears.
106. I come up with new ideas while doing any task /activities.
107. I am willing to accept my mistakes and to change.
108. * I fail to maintain limits in any relationships.
109. I set my goals based on the awareness of my limitations.
110. I praise my friends when they do good things.
111. I know how to develop and maintain relationships with others.
112. I lower my stress by controlling my thoughts.
113. When I am upset with someone, I try to put myself in their position for a while.
114. I can use innovative ideas while solving a problem.
115. I appreciate special qualities in others.

Dimensions of Life Skills Scale	**Items Number**
Decision Making (10 Items)	14, 28, 35, 46, 53, 54, 62, 69, 74, 89
Problem Solving (13 Items)	13, 17, 19, 27, 38, 52, 66, 76, 85, 90, 92, 95, 99
Empathy (12 Items)	26, 37, 51, 63, 71, 79, 82, 83, 96, 101, 105, 113
Self-awareness (10 Items)	1, 12, 22, 29, 40, 50, 55, 65, 93, 109
Communication Skills (10 Items)	2, 5, 8, 21, 36, 59, 64, 80, 84, 98
Interpersonal Relationships Skills (18 Items)	3, 16, 20, 30, 39, 49, 58, 70, 77, 86, 91, 94, 102, 107, 108, 110, 111, 115
Coping with Emotions (9 Items)	6, 9, 25, 33, 41, 61, 67, 75, 103
Coping with Stress (9 Items)	4, 15, 24, 31, 43, 47, 56, 97, 112
Creative Thinking Skills (14 Items)	10, 34, 42, 48, 60, 73, 78, 81, 87, 88, 100, 104, 106, 114
Critical Thinking Skills (10 Items)	7, 11, 18, 23, 32, 44, 45, 57, 68, 72

Scoring:	Never (N)	Rarely (R)	Sometimes (S)	Usually (U)	Always (A)
	1	2	3	4	5

* These items are reverse scored

Indian Journal of Social Psychiatry (2009), 25(1-2), 29 - 37.

DISSOCIATIVE EXPERIENCES IN SCHIZOPHRENIA

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ABSTRACT

Background: Dissociative symptoms and disorders are found in wide variety of clinical contexts including schizophrenia. **Aim**: This is a cross-sectional hospital based study with three objectives, viz., i) to examine the presence of dissociative experiences in schizophrenia; ii) to compare the socio-demographic and clinical variables between schizophrenia patients with and without dissociative experiences and iii) to compare the treatment response at the end of 6 weeks between schizophrenia patients with and without dissociative experiences. **Methods**: Sixty patients with schizophrenia (30 males and 30 females) who fulfilled the inclusion and exclusion criteria of the study were selected for the study by purposive sampling. For data collection, socio-demographic and clinical data sheet, Dissociative Experience Scale, Positive and Negative Symptoms Scale (PANSS) and Childhood Maltreatment Interview Schedule - Short Form were used. **Results**: Results showed that a significant percentage of patients diagnosed with schizophrenia also had dissociative experiences (53.3%), and these patients also had higher proportion (59.4%) of positive symptoms. Schizophrenia patients with dissociation required more amount of medication than non-dissociative group and these patients were more emotionally abused (insulted and humiliated) by their mothers than non-dissociative patients. **Conclusion**: Dissociative symptoms may resemble psychotic symptoms in many instances. More severe forms of dissociation may even be misdiagnosed as schizophrenia. In fact, it is not uncommon for patients with posttraumatic stress disorder or dissociative identity disorder to receive a misdiagnosis of schizophrenia.

Key words: *Schizophrenia, dissociation, childhood trauma*

INTRODUCTION

Dissociative symptoms are found in various psychiatric disorders as a secondary ailment (Spiegel & Cardema, 1991). According to classificatory systems like DSM IV (APA, 1994) and ICD10 (WHO, 1992), dissociation is 'a disruption in the usually integrated functions of consciousness, memory, identity or perception of the environment'. The concept of dissociation was introduced in modern day psychiatry in the first decade of 20th century to describe hysterical phenomena (Janet, 1907). Authors like Eugene Bleuler stated that symptoms like disruption of thinking and emotions might have some roots in dissociative phenomena (Bleuler, 1911). Some clinicians are in favour of associating schizophrenia and dissociative symptoms because of their closeness in symptomatology (Spitzer et al, 1997; Rosenbaum, 1980). Nonetheless, often some symptoms of schizophrenia may also mimic the symptoms of other psychiatric illnesses like Post Traumatic Stress Disorder (PTSD), depersonalization disorder and multiple personality disorder (MPD) (Spiegel & Cardema, 1991; APA, 1994; Coons, 1984; Ross et al, 1990). Factors like childhood abuse in the form of sexual, physical and psychological abuse are a common etiological (or at least pathological) factor in the occurrence of both schizophrenia and dissociative disorders (Goff et al, 1991; Waldinger et al, 1994). Among the schizophrenia patients, presence of the history of early traumatic experiences like 'abuse' is also closely related to the initiation of dissociative symptoms like the patients who have dissociation de novo (Goff et al, 1991). Patients with schizophrenia who have history of childhood abuse have an earlier age of onset and tend to relapse more frequently than patients without such history (Goff et al, 1991). Song et al (2001) stated that patients with schizophrenia are more prone to experience dissociation than normal population and people with other forms of mental disease. But later, Brunner et al (2004) contradicted this view as they investigated the occurrence of dissociative symptoms in schizophrenia and borderline personality disorder (BPD) patients and found that BPD patients had higher rate of dissociative symptoms than patients with schizophrenia.

The present study was done to examine the dissociative

Accepted on 4th June, 2009

experiences in schizophrenia, to compare the socio-demographic and clinical variables between schizophrenia patients with or without dissociative experiences and to compare the treatment response at the end of 6 weeks between schizophrenia patients with or without dissociative experiences.

MATERIALS AND METHODS

Study Design and Sampling

This study was a cross-sectional hospital based one. Sixty schizophrenic patients (30 male and 30 female) who fulfilled the inclusion and exclusion criteria for the study were interviewed at the Central Institute of Psychiatry from April, 2007 to November, 2007. After taking written informed consent from the patients and their guardians, the authors collected the required data by applying the instruments used in the study.

Procedure

Patients were diagnosed with schizophrenia as per ICD-10-DCR critetia (WHO, 1993). Each patient was included in this study after considering the inclusion and exclusion criteria and assessed through the socio-demographic and clinical data sheet which covered socio-demographic variables like age, sex, education, occupation, marital status, etc., clinical facts like past history, family history of mental illness, treatment history, physical examination, psychiatric evaluation and final diagnosis.

After admission, first rating was done with Dissociative Experience Scale (DES) (Bernstein & Putnam, 1986) and Positive and Negative Syndrome Scale (PANSS) (Kay et al, 1987). A second and third rating was done after 2 and 6 weeks of treatment respectively. The questions in DES are in English and the subjects in the present study were mostly Hindi speaking. For that reason, the scale was translated into Hindi through an appropriate method. Treatment of each day was recorded systematically in a treatment chart from the day of admission to the end of 6 weeks. To measure the history of child abuse, Childhood Maltreatment Interview Schedule-Short Form (CMIS- SF) (Briere & Runtz, 1988) was used.

The data were analyzed by the computer software programme, Statistical Package for Social Sciences, 13th version for Windows (SPSS, Inc., Chicago, IL). Statistical measures like descriptive statistics, independent sample t-test (for seeing the group difference in the continuous values) and chi-square test (for seeing the group difference in the categorical values) were applied in analysis.

RESULTS

Table1.1: Comparison of socio-demographic and clinical variables between dissociative and nondissociative schizophrenia group (N=60)

Variables	Non-dissociative Group DES Score<30** (n=28)	Dissociative Group DES Score>30*** (n=32)
Patient's Age (in years)*	32.25 ± 6.02	31.17 ± 5.82
Sex*		
Male	12	18
Female	16	14
Education*		
Primary	9	5
Secondary	4	14
Senior Secondary	6	7
Graduate & Above	9	6
Occupation*		
Employed	7	15
Unemployed	21	17
Marital Status*		
Married	19	20
Unmarried	9	12
Religion*		
Hindu	22	27
Non-Hindu	6	5
Mother Tongue*		
Hindi	22	26
Others	6	6
Residence*		
Rural	8	16
Semi-Urban	9	9
Urban	11	7
Family Income/ Month*		
< Rs.5000	9	19
Rs. 5000 - 10,000	14	8
> Rs. 10,000	5	5

*p=non-significant
** Person who scores <30 in the Dissociative Experience Scale is said to have no dissociative symptoms as per the norms of DES
*** Person who scores >30 in the Dissociative Experience Scale is said to have dissociative symptoms as per the norms of DES

Table1.1 and1.2 show the comparison of socio-demographic and clinical variables between non-dissociative (DES<30) and dissociative groups (DES>30). Schizophrenia patients with dissociation were less educated but more employed than non-dissociative group. Regarding marital status, religion, mother tongue, residence and monthly family income, there

was no significant difference between the two groups.

Table1.2: Comparison of socio demographic and clinical variables between dissociative and nondissociative schizophrenia group (N=60)

Variables	Non-dissociative Group DES Score<30* (n=28)	Dissociative Group DES Score>30** (n=32)
Family Members (in Nos)***	6.40 ± 3.31	6.60 ± 3.01
Family Type***		
Nuclear	7	9
Partially Joined	15	18
Fully Joined	6	5
Age of Onset (In Yrs)***	26.53 ± 6.34	25.53 ± 6.07
Duration of Illness(In Yrs)***	5.75 ± 3.75	5.61 ± 3.53
Nature of Past Treatment		
Drug Received***		
No	10	5
Yes	18	27
Antipsychotic Received***		
No	10	7
Yes	18	25
Trihexyphenidyl Received*		
No	22	16
Yes	6	16
Family History*		
Non-Affective	6	3
Affective/Other	5	2
PANSS At Admission ***		
Positive Score	27.36 ± 4.72	26.37 ± 5.98
Negative Score	24.46 ± 5.89	24.25 ± 6.59
Gen. Psychopathology	51.96 ± 9.70	50.84 ± 10.75
Total Score	104.50 ±14.57	101.47 ± 17.82
DES Score at Admission**		
DES actual Score	15.57 ± 8.51	42.67 ± 8.59
Diagnosis (Schizophrenia)***		
Paranoid	20	26
Undifferentiated	6	5
Unspecified	2	1

*p<.05 (Significant) **p<.01 (Significant), ***p=Not Significant

Similarly, differences in the factors like total number of family members, family type, age of onset and duration of illness were also insignificant between these two groups. The dissociative group received more drugs in the past for their present mental illness and required significantly more (p=0.02) trihexyphenidyl to manage their extrapyramidal drug side effects. Non-dissociative patients had significantly more (p=0.03) family history of affective and non-affective illness. There was no significant difference in PANSS baseline score between the groups, but there was statistically significant difference (p=.001) between the two groups regarding baseline DES actual score.

Table 2.1: History of childhood emotional abuse from the parents of the patients

CMISF ITEMS	Patients (N=60)	
	Emotional Abuse by Mother n(%)	Emotional Abuse by Father n(%)
(Yell at You)		
No	13 (21.7)	15 (25)
Yes	47 (78.3)	45 (75)
(Insult You)		
No	30 (50)	21 (35)
Yes	30 (50)	39 (65)
(Criticize You)		
No	30 (50)	32 (53.3)
Yes	30 (50)	28 (46.7)
(Try to make you feel guilty)		
No	43 (71.7)	41 (68.3)
Yes	17 (28.3)	19 (31.7)
(Humiliate You)		
No	43 (71.7)	43 (71.7)
Yes	17 (28.3)	17 (28.3)
(Embarrass You)		
No	48 (80)	46 (76.7)
Yes	12 (20)	14 (23.3)
(Make you fell a bad person)		
No	52 (86.7)	50 (83.3)
Yes	8 (13.3)	10 (16.7)

In three items of the Childhood Maltreatment Interview Schedule i.e., 'yelling by mother/father towards the child', 'insulting child' and 'passing of critical comments', most of the patients of the present study have mentioned that they had the experience of being criticized and insulted by their parents. In other items, most of the respondents of either group reported that they did not have those traumatic experiences during their childhood.

Table 2.2: Physical Abuse done by the parents of the patients during childhood

Variables	Patients (N=60)	
	Physical abuse by mother n (%)	Physical abuse by father n (%)
(Slap you)		
No	25 (41.7)	26 (43.3)
Yes	35 (58.3)	34 (56.7)
(Hit you)		
No	35 (58.3)	34 (56.7)
Yes	25 (41.7)	26 (43.3)
(Beat you)		
No	41 (68.3)	44 (73.3)
You	19 (31.7)	16 (26.7)
(Punch you)		
No	57 (95.0)	58 (96.7)
Yes	3 (5.0)	2 (3.3)
(Kick you)		
No	54 (90.0)	55 (91.7)
Yes	6 (10.0)	5 (8.3)

Most patients of the present study reported that they had been slapped (n=35) by their parents during their childhood and some of them had the experience of being hit by parents during their childhood. But more severe forms of physical abuse, like 'punching' and 'kicking' was reported by very few respondents.

Table 3.1: Results of items of Childhood Maltreatment Interview Schedule ` -Short Form (CMIS-SF) traumatic experiences of the sample (N=60)

CMISF ITEMS	PATIENTS	
	n	%
Witnessing Parental Drug Abuse		
No	36	60
Yes	24	40
Witnessing Physical Abuse Among Parents		
No	27	45
Yes	33	55
Before 8 yrs Father Loved/Cared		
Not at all	2	3.3
Somewhat	8	13.3
Adequate	20	33.3
Very Much	30	50.0
Before 8 yrs Mother Loved/Cared		
Not at all	0	0
Somewhat	7	11.7
Adequate	12	20.0
Very Much	41	68.3
Father Loved/Cared between 8-16 yrs		
Not at all	3	5
Somewhat	9	15
Adequate	22	36.7
Very Much	26	43.3
Mother Loved/Cared between 8-16 yrs		
Not at all	1	1.7
Somewhat	6	10
Adequate	14	23.3
Very Much	39	65.0
Sexual abuse		
No	49	81.7
Yes	11	18.3
Sexual Intercourse		
No	53	88.3
Yes	7	11.7

Most of the patients of schizophrenia in the present study had experiences of witnessing physical abuses between their respective parents in childhood. A considerable number of patients also witnessed drug abuse of parents during their childhood (n=24). In younger age group, father used to love or care for 30 patients (50%) and mother did so for 41 (68.33%) patients. But during the age of 8-16 years, 26 (43.3%) patients were loved very much by their father and their mother loved 39 (65%) patients.

Most of the patients reported good care and attachment from their parents during their early childhood and adolescence. Very few patients of the study had the experience of being sexually abused by someone (n=11) and also only seven patients (n=7) have had the experience of forceful sexual intercourse with someone.

Table3.2: Comparison of childhood maltreatment interview schedule (CMIS) items between dissociative and non-dissociative schizophrenia group (N=60)

CMISF Items	Non-dissociative Group DES<30 (n=28)	Dissociative Group DES>30 (n=32)
Witnessing Parental Drug Abuse		
No	17	19
Yes	11	13
Relatives Who Abused Substances		
Father/Brother	9	10
Paternal/Maternal Uncle	2	3
Age of Patient When Parental Drug Abuse Started*		
5-10 yrs	8	3
11-17 yrs	3	10
Witnessing Physical Abuse Among Parents		
No	15	12
Yes	13	20
No. of Times Patient Could Recall Abuse Between Parents		
1-10 times	10	12
> 10 times	3	8
Violence Direction (Father/Mother)		
No	15	13
Yes	13	19
Violence Direction (Mother/Father)		
No	25	28
Yes	3	4
Medical Care Required		
No	23	22
Yes	5	10
Before 8 yrs Father Loved/Cared		
Not at all	1	1
Somewhat	4	4
Adequate	10	10
Very Much	13	17

* p<.05 (Significant)

Table 3.2 shows the comparison of childhood trauma between non-dissociative and dissociative patients. There was a significant difference (p=.02) between the dissociative and non-dissociative patients in the item of witnessing parental drug abuse during the age of 11 to 17 years of the CMIS-SF. In other areas, no significant difference between the two groups could be noticed.

Table 4: Comparison of treatment response between dissociative and non-dissociative schizophrenia group (N=60)

Changes in PANSS Positive score	Non-dissociative Group DES < 30 (n=28)	Dissociative Group DES > 30 (n=32)
Between 1st & 2nd week	10.61 ± 4.81	9.13 ± 5.75
Between 2nd & 6th week	4.68 ± 3.53	5.37 ± 4.96
Between 1st & 6th week	15.28 ± 4.71	14.50 ± 6.21
Changes in PANSS Negative score		
Between 1st & 2nd week	6.57 ± 2.54	6.97 ± 3.43
Between 2nd & 6th week	3.36 ± 2.54	2.87 ± 3.43
Between 1st & 6th week	9.93 ± 4.11	9.84 ± 4.44
Changes in Gen. Psychopathology score		
Between 1st & 2nd week	16.25 ± 7.02	17.44 ± 8.99
Between 2nd & 6th week	8.96 ± 6.28	7.94 ± 7.98
Between 1st & 6th week	25.21 ± 8.29	25.37 ± 10.82
Changes in total PANSSSS score		
Between 1st & 2nd week	34.14 ± 12.66	33.53 ± 14.12
Between 2nd & 6th week	17.00 ± 10.04	15.87 ± 13.76
Between 1st & 6th week	51.14 ± 13.75	49.40 ± 16.36
Changes in DES score		
Between 1st & 2nd week*	4.87 ± 7.95	12.03 ± 11.28
Between 2nd & 6th week	1.92 ± 4.52	11.18 ± 11.39
Between 1st & 6th week	6.78 ± 8.63	23.21 ± 13.84

*p<.01(Significant)

Table 4 shows the comparison of treatment response between non-dissociative and dissociative patients with schizophrenia. It is evident that both the groups had shown more or less equal improvement during the period from admission to the end of 6 weeks, when assessed by PANSS, but there were significant differences regarding changes in DES score between the two groups during the same period with maximum change between 2nd and 6th week in the non-dissociative group.

Table 5: Syndrome type of the schizophrenic patients (N = 60)

Syndrome type	Schizophrenic patients n	%
Positive type	35	58.3
Negative type	25	41.7

Syndrome type	Patients Non-dissociative Group [DES < 30] (n=28)	Dissociative Group [DES > 30] (n=32)	x^2	df	p
Positive type	16	19	.031	1	0.53
Negative type	12	13			

Table 5 demonstrates the syndrome type of patients with schizophrenia based on PANSS score. It shows that there were 35 (58.3%) patients of positive syndrome type and 25 (41.7%) patients with negative syndrome. It was noted that in non-dissociative group, there were 16 patients with positive syndrome type and in dissociative group, there were 19 positive syndrome type patients. Similarly, in non-dissociative and dissociative groups, there were 12 and 13 patients with negative and positive syndrome types respectively. However, no statistically significant difference was noted.

DISCUSSION

Previously, many researchers have applied the Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986; Carlson & Putnam, 1993) on schizophrenia patients to explore the 'dissociative experiences' but few necessary elements like, 'frequency and extent of dissociative symptoms in schizophrenia', 'elaborative or substantial information related to socio-demographic and clinical variables of schizophrenia patients with dissociative symptoms', 'difference in treatment response between two subgroups of patients, i.e., 'schizophrenia patients with or without dissociative experiences' and 'prevalence of the patterns of childhood trauma among the schizophrenic patients with dissociative experiences' have not been given proper attention (Goff et al, 1991). Almost all studies have used a cross sectional design.

Previously, only two studies could find out association among schizophrenic symptoms, dissociative phenomena and childhood traumatic experiences with occurrences of dissociative symptoms when they developed schizophrenia (Spitzer et al, 1997; Holowka et al, 2003). Earlier studies had given extra attention to childhood sexual abuse (CSA) and ignored 'other traumatic events', which might also cause dissociative phenomena and subsequently schizophrenia (Lysaker et al, 2001; Lysaker et al, 2004). Previously done studies have also other pitfalls like gender bias (Kim et al, 2006; Schaffer et al, 2006; Compton et al, 2004), inclusion of many psychotic disorder patients in the study (Schaffer et al, 2006; Compton et al, 2004; Schenkel et al, 2005), or preponderance of the patients with chronic illness (Kim et al, 2006; Schenkel et al, 2005) or inclusion of only in-patients (Lipschitz et al, 1999). Those elements were limiting factors of the previous studies done over similar samples.

In schizophrenia, chronic patients are exposed to longer antipsychotic treatment, have multiple hospitalizations and

other negative life events, and generally have more negative and less positive symptoms. Chronicity confounds the link between symptoms at certain point and effects of past experiences upon these symptoms. Moreover, as the nature of the illness leaves patients (particularly women) more vulnerable to abuse (Goodman et al, 1999), to comment on causal relationship between high rates of past trauma and schizophrenia is also difficult. In present study, above-mentioned limitations have been addressed by including patients after evaluating through a detailed self designed performa which included socio-demographic details, details about the illness, past history, family history, treatment history, physical examination, psychiatric evaluation and final diagnosis.

In present study, results like mean age of the patients and mean age of onset of the illness were much lower than the previous studies (Ross et al, 1994; Spitzer et al, 1996; Moise, 1995). Additionally, the mean duration was 5.68±3.61 years, whereas in Spitzer et al (1997) study, patients had longer duration of illness (12.20±9.30 years). In this way, the present study tried to minimize the influence of 'chronicity factor' of the illness. In the present study, most of the dissociative schizophrenia patients (i.e., in 32 patients) had predominantly positive syndrome. This finding is also consistent with the Spitzer et al (1997) study which showed majority of the patients who had both dissociative syndrome and schizophrenia had positive symptoms.

Trauma and Dissociative Symptoms in Schizophrenia

The link between trauma and dissociation has been established by studies conducted on various populations (Draijer & Langeland, 1999; Hodgins et al, 1996; Saxe et al, 1993), but very few studies till date have given clinical and research focus over the sample of patients with schizophrenia (Holowka et al, 2003). In previous studies, it was observed that principal attention was given to four distinct forms of maltreatment (emotional abuse, verbal abuse, physical abuse and sexual abuse) in schizophrenia population, but in present study, two more forms like 'witnessing parental drug abuse' and 'witnessing parental violence' were also included through 'Childhood Maltreatment Interview Schedule-Short form'. This scale has some extra dimensions to measure wide areas of child-abuse. We found that 40% of the sample witnessed parental drug abuse and 55% patients witnessed physical violence among their parents in their childhood. While assessing childhood emotional abuse of the patient by their mother, we found that 78.3% patients were yelled upon, 50% were insulted and criticized frequently. Similarly, 75% were yelled at by their father, 65% insulted and 46.7% were criticized. While assessing physical abuse, we found that both father and mother used to slap 56% to 58% of the patients at their childhood. They even used to hit and beat them frequently in a severe manner. We found that 11 patients (18.3%) were sexually abused and 7 patients (11.7%) were made to involve in forceful intercourse with someone during their childhood. Factors like witnessing abuse and parental substance abuse during the late childhood being major source of trauma in children have been confirmed in the present study.

Moise (1995) showed relatively low prevalence of childhood sexual abuse in his population. Only one of the six (17%) patients (two females and four males) who completed all four of the psychometric tests had a history of childhood abuse. These male patients were physically abused but not sexually abused. In psychiatric outpatients, the prevalence of sexual abuse has been estimated from 50% to 65% (Palmer et al, 1992; Waldinger et al, 1994) for females and 25% for males (Smith-Hutchings & Dutton, 1993). However, most of these patients were not diagnosed with schizophrenia. One study that included 46% of women patients with schizophrenia reported 45% of the sample had been sexually abused and that these women had higher levels of psychotic symptoms (Mvenzenmaier et al, 1993). The prevalence of CSA varies greatly from country to country or culture to culture. It ranges from 12-50% across the countries. But some factors are also attached with it like 'underreporting', 'stigma', 'parental unawareness' (Chandra et al, 2003; Craine et al, 1988; Fergusson et al, 2000; Spataro et al, 2001).

In present study, we found lower prevalence of sexual abuse than other studies. This might also be due to same factors mentioned in previous studies (Chandra et al, 2003; Craine et al, 1988; Fergusson et al, 2000). Studies related to CSA might have underestimated the degrees of CSA among the severely ill psychiatric patients because it is difficult to get the reports of the history of child abuse from the psychiatrically ill persons, especially when they have developed psychotic illness (Spataro et al, 2001; Dill et al, 1991).

Present study suggests that emotional, physical and sexual

abuse during childhood may also influence the profile of symptoms in adult schizophrenic patients. Whereas previous studies have focussed largely on sexual and physical abuse, our results suggest that other forms of early trauma (particularly emotional abuse) may also be important in developing dissociative symptoms. Claussen and Crittenden (1991) showed that although psychological (emotional) abuse was frequently present in cases of physical abuse, in other cases it also occurred in the absence of physical abuse. This may help to explain the results of previous studies concerning observed relationships between dissociation and physical or sexual abuse. Our results are consistent with such an explanation.

Dissociative Symptoms in Patients with Schizophrenia

We found 32 (53.3%) patients with dissociative symptoms and 28(46.7%) without the same in our study sample of 60 schizophrenia patients. This finding corroborates with Haugen and Castillo (1999) study where co-morbid dissociative symptomatology was as high as 50% in schizophrenic population. In our study, age of the non-dissociative patients was slightly higher which was not significantly different from the dissociative group. Moise (1995) also found that the mean age of the dissociative schizophrenia patients was younger (39.80±7.80 years) than the non-dissociative patients (42.20±9.70 years). It can be said that schizophrenia patients with more dissociative experiences were somewhat younger than patients with less dissociative experiences. Explanation of this phenomenon may be that dissociation is intimately related to a trait known as fantasy proneness (Merckelbach et al, 2005). It can be hypothesized that younger age group has unresolved fantasy thinking making them more prone to dissociative experiences.

Regarding the marital life, our results indicate that in both the groups there were more number of married patients than unmarried. This finding contradicts with Moise (1995) study which probably occurred due to the fact that in our country, marriage is culturally more sanctioned even in mentally challenged persons than the western society. Regarding past treatment for present illness, our results revealed that dissociative schizophrenia patients received more medications than the non-dissociative schizophrenia patients. They also received a significant amount of trihexyphenidyl than their non-dissociative counterparts. It may be due to the reason that members of the dissociative group were functioning more so that their family members were more concerned about their illness, and hence, they were adequately treated. As they were treated mostly with antipsychotics, they required more amount of trihexyphenidyl to tackle extrapyramidal side effects. Till date there is no study comparing the past treatment in schizophrenia patients with or without dissociative experiences.

While assessing the family history, we found that non-dissociative schizophrenia patients had significantly more history of both affective and non-affective illness in their family as compared to the dissociative schizophrenia patients. Though there is no evidence in the literature, but it might suggest that schizophrenic patients with dissociative symptoms may be genetically different than schizophrenia patients without dissociative symptoms, which needs further exploration in larger cohort studies.

Regarding the comparison of on admission PANSS score between dissociative and non-dissociative schizophrenia, we found no significant group difference. Severity of both the groups as assessed by PANSS was similar. While considering the syndrome type (according to PANSS score) in dissociative schizophrenia group, we found 19 patients (59.4%) were positive syndrome type and 13 patients (40.6%) were negative type. This finding was similar to Spitzer et al (1996; 1997) study where authors had shown that 15 (56%) of the 27 patients exhibited a predominant positive syndrome and 12 (44%) patients showed a negative syndrome type among the patients with dissociative symptoms.

We found that though many of the patients reported various forms of abuse/trauma at their childhood but except 'emotional abuse by mother, none of the other items of the Childhood Maltreatment Interview Schedule-Short Form (CMIS-SF) showed significant difference between the two groups. Results of the present study indicate that the schizophrenia patients with dissociative symptoms were more emotionally abused (insulted and humiliated) by their mother compared to the schizophrenia patients without dissociative symptoms. This finding corroborates with Holowaka et al (2003) who stated that emotional abuse is correlated with dissociation observed in a schizophrenia population. One explanation for this finding is that some congenital vulnerability for schizophrenia may be associated with impaired coping

mechanisms that render children more susceptible to the effects of severe stress which might lead to development of schizophrenia (Walker & Diforio, 1997). Thus, a child who is at risk for schizophrenia may also be at risk for more dissociative experiences in wake of maltreatment and dissociation that persists into adulthood further complicates the course of illness.

CONCLUSION

This study revealed some intriguing facts related to schizophrenia and dissociative symptoms. Severe forms of dissociative symptoms sometimes may look like symptoms of psychosis. So clinicians have to be alert and agile while dealing with the patients of either dissociation or schizophrenia to avert misdiagnosis. Early and regular exposure to traumatic incidents may make an individual vulnerable to both dissociation and schizophrenia. Though this study had shown some interesting results, but it is not free from limitations which are:

- The sample size was small. When subgroups were categorized by their levels of dissociation, the groups were too small for adequate final comparisons.
- The results of this study may be difficult to generalize to the entire schizophrenia population because of the non-representative nature of the sample.
- The lack of a control group prevents any claim of specificity of the observed relationship to schizophrenia.
- The measurement of dissociative symptoms was complicated by ongoing symptoms and may have confounded the results.

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Indian Journal of Social Psychiatry (2009), 25(1-2), 38 - 43.

PLAY PROFILE OF MENTALLY CHALLENGED CHILDREN AND ADOLESCENTS

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ABSTRACT

Background: Children's participation in play and social pretense facilitates their cognitive growth and social understanding. Since play is vital aspect of childhood and adolescents, play profile of 50 mentally challenged children and adolescents was explored. **Methods:** A checklist was designed to record play behaviour, level of play, play preferences, and specific kinds of play. **Results:** Findings suggested that 84% participants enjoyed play. Sixty four percent participants prefered to be followers and 50% participated in play passively. Poor play behaviour was present in 78% participants. Fifty four percent participants got involved in relational play; 20% participated in pretend play and 12% in sequence pretend play. Forty two percent participants liked to play with peer group. Free muscular play, experimental and manipulative play, and constructive play were displayed by majority of participants. Seventy six percent participants did not know games governed by rules. **Conclusion:** Since the quality and quantity of children's play have been related to their social and emotional understanding, play should be incorporated in the overall management plan of mentally challenged children and adolescents.

Key words: *Play behaviour, constructive play, group play*

INTRODUCTION

Parents and professionals agree that play is an important and necessary part of child development. It is being considered as a launching pad from where subsequent learning takes off as per the ability of the child. Through play children have to learn and practise new skills at their own pace and each child develops his own style of playing. There is no "Right Way" to play. The important thing is that children enjoy doing it. Play is a natural medium of self-expression and because of its non-verbal aspects, it may be used effectively with children having limited intellectual abilities.

Piaget (1962) contented that children's pretend play activities proliferate during early childhood. Developmental psychologists agree that children's participation in social pretense facilitates their cognitive growth and social understanding (Bretherton & Beeghly, 1989). Although most play studies during infancy and toddlerhood have focussed on children's play in laboratory settings, similar age-related trends have been reported for children's pretend play at home (Youngblade & Dunn, 1995). Also, age trends are closely tied with concomitant advances in children's cognitive, linguistic, and social abilities (Piaget, 1962; Tamis-LeMonda & Bornstein, 1993). Symbolic play serves important socio-affective as well as cognitive functions in children's development (Piaget, 1962). During pretend play, young children try out alternative or hypothetical realities by practising "subjective" thinking (Bretherton & Beeghly, 1989; Harris & Kavanaugh, 1993). Children play with their emotional experiences, communicate their inner feelings and conflicts, and master their aggressive impulses. Moreover, the enthusiasm with which children play with objects is related to their current cognitive status and to the sophistication of their play and exploration (Matas et al, 1978).

Tamis-LeMonda and Bornstein (1993) speculated that sustained attention during play and play maturity reflect a common underlying cognitive ability. Young children take an increasingly active, initiating role in social pretend games during early childhood, as facilitated by their own burgeoning communicative and social-cognitive skills and the supportive

 Accepted on 21st Jan., 2009

matrix provided by caregivers or older children, Individual differences in young children's social pretend play skills have been associated with their competence in other domains, both concurrently and in later childhood. The quality and quantity of children's play are related to their social and emotional understanding (Bretherton & Beeghly, 1989), social perspective-taking skills and the quality of their relationships with their mother and siblings (Youngblade & Dunn, 1995). Hauser-Cram (1996) observed that mothers' teaching style with their developmentally disabled or typically developing toddlers during object exploration had a significant positive effect on their toddlers' mastery motivation. Similarly, the quality, persistence, and enthusiasm with which children explore objects is related to the maturity of their object play and to a host of intrapersonal and interpersonal variables such as their current cognitive abilities (Morgan et al, 1991), other attentional processes and fine motor skills (Ruff & Saltarelli, 1993), variations in parental teaching style (Wachs, 1987), and the quality of the infant-caregiver relationship established during the first year of life (Matas et al, 1978).

The ability to share attention to toys or events with others during social play is thought to be an important antecedent of children's representational abilities (Rocissano & Yatchmink, 1983). Specific parental behaviours during dyadic play can either disrupt or facilitate children's play. Contingent parental verbal input, positive affect, and sensitivity have been positively associated with the level and duration of children's exploratory and play behaviour, both concurrently and in later childhood (Matas et al, 1978). Different factors influence the way a child plays, such as his individual temperament, his activity level and kinds of toys and games he likes best. Individual differences in the onset, rate, and style of children's pretend play and language skills are also well documented (McCune, 1995). The absence of social play, poor understanding of rules and regulation, absence of symbolic or representative play are some of the differentiating highlights in the groups of children with mental retardation (Khoshali, 2008). Keeping in view of these factors, in the present study, an attempt was made to explore play profile of mentally challenged children with respect to play behaviour in group and in individual play situation, level and type of play, play preferences, knowledge of play rules and reasons for poor play behaviour.

METHODS

Sample

A sample of 50 children and adolescents (34 male and 16 female) with diagnosis of mental retardation (according to Diagnostic Criteria for Research, ICD-10) (WHO, 1993), who were regularly attending Deepshikha Institute for Child Development and Mental Health, Ranchi was selected for the study.

Tools

Socio-demographic and Clinical Data Sheet: Socio-demographic and clinical details of children and socio-demographic characteristics of parents were recorded using this performa.

Checklist for Play Profile: Self designed information checklist was developed to record characteristics of play. Based on theoretical construct, the checklist was designed. It consisted of description of play behaviour, level of play, play preferences, and specific kinds of play. Face validity was confirmed taking opinion of professional experts.

PROCEDURE

Professionals (special educators and clinical psychologists) who were involved in collection of data were initially trained on play and its different aspects through audio-visual mode. For assessment on various aspects of play, they were trained by doing practice-exercises on play checklist. They observed play activities of participants in various play settings. Parents of participants were interviewed for getting background information of their wards and their play behaviour at home. On the basis of information given by parents and observation of the individual participant with respect to play, data was collected.

RESULTS

Socio-demographic and clinical characteristics of participants are given in Table 1. Most of the participants were 11 to 14 years old, male, studying in primary section of special education school, and were moderately mentally retarded.

Table 1: Showing socio-demographic and clinical characteristics of participants (N=50)

Variable	Number	%
Age		
7-10 years	11	22
11-14 years	21	42
15-18 years	18	36
Sex		
Male	34	68
Female	16	32
Special Education		
Primary	21	42
Secondary	13	26
Prevocational	09	18
Vocational	07	14
Severity level of Mental Retardation		
Mild	14	28
Moderate	22	44
Severe	10	20
Profound	04	08
Associated problem		
Cerebral Palsy	10	20
Communication disorder	29	58
Visual Impairment	03	06
Pervasive Developmental Disorder	05	10
Psychiatric conditions	08	16
Problem behaviours	34	68

Present study was conducted to assess play profile of mentally challenged children and adolescents. Data was collected regarding description of play behaviour, level of play, play preferences, and specific kinds of play.

Table 2 shows that 84% of participants enjoyed play activities, 64 % of them were followers who did not take initiative role in group play situation and in considerable number of participants (78%), poor play behaviour was present due to various reasons, namely, no companions (6%), poor play facilities (8%), quarrelsome behaviours (12%), inability to assert his own rights (14%), and other skill deficits (30%).

Table 3 shows that majority of subjects (54 %) displayed relational play. Thirty two percent participants indulged themselves in pretend and sequential pretend play.

Table 4 suggests that majority of children and adolescents liked to play with peer group (42%) followed by playing individually (24 %). Indoor play was preferred by 52% and outdoor by 48%.

Table 2: Showing the 'description of play behaviour' of participants

Description of Play Behaviour (N=50)	Number	%
Play Behaviour		
Enjoys play	42	84
Not interested in play	4	08
Observes other playing	4	08
Group Behaviour		
Follower	32	64
Leader	18	36
Active	25	50
Passive	25	50
Poor play behaviour		
Present	39	78
Absent	11	22
Reasons for poor play behaviour		
No companions	03	06
Poor play facilities	04	08
Quarrelsome	06	12
Unwilling to take turns	04	08
Inability to assert his own right	17	14
Multiple reasons	15	30

Table 3: Showing 'level of play' of participants (N=50)

Level of Play	Number	%
Exploratory	03	06
Relational	27	54
Pretend	10	20
Sequence pretend	06	12
Play with rules	04	08

Table 4: Showing 'play preferences' of participants (N=50)

Play Preferences	Number	%
Play Preferences		
Play alone	12	24
Play with older	03	06
Play with younger	04	08
Play with peer group	21	42
No preferences	10	20
Types of Play Preferences		
Indoor	26	52
Outdoor	24	48

Result for specific kinds of play (Table 5) shows that 60% participants showed free muscular play, 50% involved themselves in running activities and 20-22% in balancing activities and using clay. Only 6 % participants were found to use scissors properly. Constructive play activities such as building house, modeling, drawing and painting, etc. were

present in 50% of participants. Majority of participants (68%) were not destructive in play situation. However, destructive play behaviours like destroying things, knocking down buildings, using scissors to damage materials, etc. were present in 32% of participants. Most of the participants (76%) didn't have knowledge of games governed by rules.

Table 5: Showing 'specific kind of play' of participants(N=50)

Specific Kind of Play	Count	%
Free Muscular Play		
Absent	20	40
Running	25	50
Jumping	04	08
Climbing	01	02
Experimental and Manipulative Play		
Absent	18	36
Trying to balance	10	20
Trying out scissors	03	06
Using Clay, sand, plasticine	15	22
Multiple Kind	04	08
Constructive Play		
Absent	25	50
Making and building house	11	22
Modelling	05	10
Drawing & Painting	06	12
Multiple kind	03	06
Destructive Play		
Absent	34	68
Destroy things	03	06
Knocking down buildings	03	06
Using scissors to damage materials	03	06
Damaging toys	04	08
Multiple kind	03	06
Games governed by Rules		
Present	08	16
Absent	38	76
Not known	04	08

DISCUSSION

Information was collected regarding play behaviour, level of play, play preferences and specific kinds of play to find out play profile of mentally challenged children and adolescents. Findings suggested that majority of children (84%) enjoyed play. However, most of the children (78%) displayed poor play behaviour. Poor play behaviour was present due to various reasons, namely, lack of companions, overprotection, poor play facilities, quarrelsome behaviours and other skill deficits. Fourteen percent participants were not able to assert their own right during play. These findings support finding of previous study (Khoshali, 2008).

In group play situation, majority of participants (64%) were followers and 50% were passive during play situation. Khoshali (2008) also reported that majority of mentally retarded children were passive observers of play by others. Difficulties in taking the initiative have been reported by children with mental retardation even in unstructured contexts like mother-child free play in comparison to mental age matched non-handicapped children (Beeghly et al, 1989).

In level of play, 54% participants showed relational play and 20% participants showed pretend play. Pretend play was found in 12% participants. Only 8% participants played with rules. Khoshali (2008) reported that 55.7% children indulged in pretentious or imaginary play. The ability of children to engage in pretend play and sequence pretend play is related to their general cognitive attainments. Since intellectual ability of mentally challenged children and adolescents is compromised, majority of them displayed relational play and limited number of them got involved in pretend or sequence pretend play. Vieillevoye and Nader-Grosbois (2008) investigated the symbolic behaviour and the self-regulation in dyads of children with intellectual disability and of normally developing children. The average symbolic behaviour in individual and dyadic play contexts did not differ in both groups, but the average self-regulation in the group with intellectual disability was lower than in the normally developing group. Some positive partial correlations were obtained between mental age, language abilities, individual pretend play, dyadic pretend play and several self-regulatory strategies in both groups although they varied in importance between groups.

In the present study, 24% participants preferred to play alone while 42% preferred to play with peer group. Level of play also depends upon child's play preference. It has been reported that regardless of disability type or degree of associated risk, children produced higher levels of object play when interacting with an involved and interested caregiver or other person than when playing alone (Beeghly, 1993). Pretend play is more displayed when children play with older siblings or other children (Youngblade & Dunn, 1995).

In specific kinds of play, free muscular play, experimental and manipulative play, constructive play, destructive play, and games governed by rules were assessed. Sixty percent participants showed free muscular play which included running (50%), jumping (08%) and climbing (02%). Sixty four percent participants were involved in experimental and manipulative play. Using clay, sand, etc., and trying to balance were most frequent activities (22% and 20% respectively). Only 6% participants were found to use scissors properly. This may be due to poor eye hand coordination which is generally found in children with mental retardation due to immature brain development. Constructive play was absent in 50% participants, however, constructive play activities such as building house, modeling, drawing and painting, etc. were present in same number of participants.

Most of the participants (68%) were not destructive in play situations. Destructive play behaviours like destroying things, knocking down buildings, using scissors to damage materials, etc. were found to be present in only 32% participants. Krakow and Kopp (1983) also reported that both children with Down's Syndrome and developmentally delayed children of uncertain etiology exhibited less simultaneous appraisal of the environment, spend more time disengaged from toys, and produced more immature exploratory behaviours such as toy throwing and banging.

Most of the participants (76%) didn't have knowledge of games governed by rules. Only 16% participants were able to understand rules of the game. Khoshali (2008) also reported that only 11.4% children with mental retardation understood rules and regulations in game situation.

Overall, findings suggest that mentally challenged children and adolescents enjoy play; however, their play profile is characterized by poor play behaviour, passive participation in play, basic level of play, and lack of knowledge about rules and regulations of game. Since play situation provides an opportunity to develop various dimensions of child's behaviour, professionals should focus on play behaviour and should try to improve it while planning remedial programmes for mentally challenged children and adolescents.

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Indian Journal of Social Psychiatry (2009), 25(1-2), 44 - 48.

TEMPERAMENT AND CHARACTER DIMENSIONS OF PATIENTS WITH BIPOLAR DISORDER

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ABSTRACT

Background: Personality features may help account for the limited success of standard pharmacological management and help discriminate response to various treatments. Understanding personality is very important as it plays a vital role in the clinical expression of bipolar disorder. There is paucity of research in India in assessing personality of patients with bipolar disorder using psychobiological model of personality. The purpose of the study was to assess temperament and character dimensions in patients with bipolar disorder. **Method**: Personality was assessed in euthymic patients of bipolar disorder (n=50). Euthymia was defined as scores of < 4 on Young Mania Rating Scale and <7 on Structured Interview Guide of Hamilton for Depression. The control group consisted of 50 non-psychiatric controls matched for age, gender, marital status and education, and scored <1 on General Health Questionnaire-5. Patients and controls were assessed using Temperament Character Inventory. **Results**: Patients had higher harm avoidance ($p<0.0001$) and lower persistence ($p<0.0001$), self-directedness ($p<0.0001$) and cooperativeness ($p<0.0001$). **Conclusion**: Patients with bipolar disorder share specific personality traits.

Key words: *Temperament, character, bipolar disorder*

INTRODUCTION

The possibility of an association between certain personality traits and bipolar disorder has implications for how the disorder is conceptualized and perhaps even how it is diagnosed. Specific personality features may help explain differences in course of illness, such as time to recovery from a mood episode or frequency of recurrences. Thus, there are clinical and theoretical reasons to study the personality of patients with bipolar disorder. It may be possible that episodes of mood disorder may have lasting deleterious effects and change an individual's personality (Soloman et al, 1996). Much of the research has been in the area of unipolar depression, and results have suggested that personality traits may be associated with greater severity of symptoms, more frequent relapse and overall worse outcome. It has been proposed that personality differences may be associated with differing responses to various types of treatment (Blatt et al, 1995). Elevations of specific personality traits may include certain maladaptive behavioural components, which increase vulnerability to symptoms of mania and depression (Lozano & Johnson, 2001). Few studies have examined personality traits as predictors of bipolar symptoms, and results to date have been discordant (Strakowski et al, 1993; Clayton et al, 1994; Akiskal et al, 1995; Heerlein et al, 1998). Personality may predispose to bipolar disorder or may modify the natural history of illness and response to treatment. Alternatively, personality traits may be sub-clinical expressions of the underlying vulnerability or may be altered by current or past mood state.

In the last few years, the Temperament Character Inventory has been applied for the evaluation of the role of temperament in the pathogenesis of many mental disorders. Researchers using various psychological measures and instruments have usually concluded that the respective personalities of remitted bipolar patients and normal control subjects are similar (Goodwin & Jamison, 1990). Manic-depressive illness seems orthogonal to personality type, and this subject has received little systematic attention in recent years. Studies have found that patients with bipolar disorder score high on harm avoidance and reward dependence, low on persistence

Accepted on 1st March, 2009

(Osher et al, 1996;1999; Engstrom et al, 2003; 2004), high on novelty seeking (Young et al, 1995), self-directedness and cooperativeness (Engstrom et al, 2003; 2004) dimensions of TCI.

The present study was designed to understand personality as it plays an important role in the clinical expression of bipolar disorder. In addition, there is paucity of research in India in assessing personality of patients with bipolar disorder using psychobiological model of personality. Thus, the purpose of the study was to assess temperament and character dimensions in patients with bipolar disorder.

HYPOTHESIS

There will be significant difference between patients with Bipolar Disorder and non-psychiatric control group on 4 temperament dimensions of harm-avoidance (HA), novelty-seeking (NS), reward-dependence (RD) and Persistence (P) and 3 character dimensions of self-directedness (SD), cooperativeness (C) and self-transcendence (ST) of Temperament Character Inventory.

METHODOLOGY

Sample

The study was conducted at the Central Institute of Psychiatry (CIP), Ranchi. Total sample size was 100. There were 50 patients who fulfilled ICD-10 DCR criteria (WHO, 1992) of bipolar disorder, and 50 subjects were taken as non-psychiatric control group. Patients had to be above 18 and below 50 years of age to enter in the study. They were taken from both inpatient and outpatient department of CIP, and only those patients who scored less that four on Young Mania Rating Scale (YMRS) (Young et al, 1978) and less than seven on Structured Interview Guide for Hamilton Depression Rating Scale (SIGH-D) (Janet & Williams, 1988) were taken. Patients having neurological disease or any other co-morbid psychiatric illness were excluded from the study. In non-psychiatric control group, only those subjects were included who scored 0 on General Health Questionnaire-5 (GHQ-5) (Shamsunder et al, 1986).

Tools

Tools used were Socio-Demographic and Clinical Data Sheet, YMRS (Young et al, 1978), SIGH-D (Janet & Williams, 1988), GHQ-5 (Shamsunder et al, 1986) and Temperament Character Inventory (Cloninger et al, 1993; 1994).

Procedure

Informed consent was obtained from all the subjects, and the study was approved by the Ethical Committee of Central Institute of Psychiatry, Ranchi. Necessary socio-demographic and clinical information was collected by interviewing patients and available relatives and from the medical records. Temperament Character Inventory (TCI) was administered.

Data Analysis

Data analysis was done with a Standard Statistical Software Package SPSS window version 11.0. Descriptive statistics and inferential statistics, such as independent t test were used with Bonferroni correction. To reduce the possibility of type I error, Bonferroni's correction was made to the level of significance and the new Bonferroni adjusted significance level taken was at $p<0.0125$.

RESULTS

Table 1 indicates that patients with bipolar disorder are significantly higher on harm avoidance and low on persistence, self-directedness and cooperativeness. Table 2 shows that patients with bipolar disorder are significantly higher on Pessimism Vs Optimism (HA1), Fear of Uncertainty (HA2), Shyness (HA3), Fatigability (HA4), and Impulsiveness Vs Reflection (NS2) than normal controls. Bipolar disorder patients appear significantly lower on Excitability Vs Rigidity (NS1) than normal.

In table 3, t-test reveals that patients with bipolar disorder are

significantly lower on Responsibility Vs Blaming (SD1), Purposefulness (SD2), Resourcefulness (SD3), Acceptance Vs Striving (SD4), Congruent Second Nature (SD5), Acceptance Vs Intolerance (C1), Empathy Vs Disinterest (C2), Helpfulness Vs Unhelpfulness (C3), Compassion Vs Revengefulness (C4), and Forgetfulness Vs Conscious (ST1).

Table 1: Comparison of temperament and character profile of patient (N=50) and control (N=50) groups

TCI components	Patients (N= 50) Mean± S.D	Control (N=50) Mean ± S.D	t (df = 98)	p (Bonferroni adjusted)
Harm Avoidance	23.44 ± 3.67	8.16 ± 3.45	21.43	0.0001
Novelty Seeking	16.76 ± 3.84	16.60 ± 5.00	0.18	ns
Reward Dependence	14.50 ± 3.02	15.46 ± 2.94	1.60	ns
Persistence	2.16 ± 1.15	6.88 ± .982	22.07	0.0001
Self Directedness	24.56 ± 5.05	34.46 ± 4.33	10.50	0.0001
Cooperativeness	25.46 ± 4.79	31.56 ± 3.90	6.98	0.0001
Self Transcendence	16.24 ± 4.05	14.72 ± 3.27	2.06	ns

ns=not significant

(*Bonferroni adjusted significance at p<0.0125)

Table 2: Comparison of sub scales in temperament profile of patient (N=50) and control (N=50) groups

Temperament Sub Scales	Patients (N= 50) Mean ± S.D	Control (N=50) Mean ± S.D	t (df=98)	p (Bonferroni adjusted)
Pessimism Vs Optimism (HA1)	8.12 ± 1.87	2.20 ± 1.16	19.02	0.0001
Fear of Uncertainty (HA2)	5.72 ± .95	2.74 ± 1.17	13.95	0.0001
Shyness (HA3)	5.00 ± 1.21	1.74 ± 1.30	12.93	0.0001
Fatigability (HA4)	4.60 ± 1.70	1.22 ± 1.21	11.42	0.0001
Excitability Vs Rigidity (NS1)	4.90 ± 1.37	6.26 ± 1.41	4.88	0.0001
Impulsiveness Vs Reflec. (NS2)	4.30 ± 1.70	2.78 ± 1.84	4.27	0.0001
Extravagant Vs Reserve (NS3)	3.86 ± 1.67	4.10 ± 2.11	0.63	ns
Disord. Vs Regimentation (NS4)	3.80 ± 1.88	3.46 ± 2.15	0.84	ns
Sentimentality (RD1)	7.06 ± 1.87	7.34 ± 1.87	0.75	ns
Attach. Vs Detachment (RD3)	4.48 ± 1.43	4.70 ± 1.50	0.75	ns
Dependence (RD4)	2.90 ± 1.29	3.44 ± 1.31	2.07	ns

ns=not significant

(*Bonferroni adjusted significance at p<0.0125)

Table 3: Comparison of sub scales in character profile of patient (N=50) and control (N=50) group

Character Sub Scales	Patients (N= 50) Mean ± S.D	Control (N= 50) Mean ± S.D	t (df=98)	p (Bonferroni adjusted)
Respon. Vs Blaming (SD1)	3.94 ± 1.70	6.02 ± 1.51	6.43	0.0001
Purposefulness (SD2)	3.22 ± 1.48	6.32 ± 1.26	11.20	0.0001
Resourcefulness (SD3)	1.76 ± 1.18	4.18 ± 1.63	8.45	0.0001
Accept. Vs Striving (SD4)	7.74 ± 2.26	8.80 ± 1.65	2.67	0.01
Congru. 2nd Nature (SD5)	7.84 ± 1.62	9.14 ± 1.67	3.94	0.0001
Accept. Vs Intolera. (C1)	3.66 ± 1.54	5.58 ± 1.51	6.27	0.0001
Empathy Vs Disinte. (C2)	4.00 ± 1.48	5.32 ± 1.26	4.77	0.0001
Helpful Vs Unhelpful (C3)	5.12 ± 1.52	6.40 ± 1.19	4.68	0.0001
Compa. Vs Revenge.(C4)	6.74 ± 2.14	8.24 ± 1.80	3.78	0.0001
Integr. Conscience (C5)	5.94 ± 1.21	6.02 ± 1.40	0.30	ns
Forgetful. Vs Consc.(ST1)	5.64 ± 2.03	4.64 ± 1.71	2.65	0.01
Transpers. Identifi.(ST2)	5.00 ± 1.55	5.68 ± 1.31	2.36	ns
Spiritua. Vs Materiali(ST3)	5.56 ± 2.24	4.52 ± 1.91	2.49	ns

ns=not significant

(*Bonferroni adjusted significance at p<0.0125)

DISCUSSION

Mean age of patient group was 28.03±8.14 years and that of control group was 30.00±6.53 years. Majority of bipolar patients were married. Patients were matched for age, marital status and education. In the current study, differences were seen between patient and control groups on temperament dimensions of harm avoidance and persistence and character dimensions of self directedness and cooperativeness. The present study replicates earlier findings of low TPQ persistence scores among euthymic manic-depressive patients (Osher et al, 1996; 1999). Low persistence may be related to the non-compliance with mood stabilizers. It is unlikely that low persistence in the patient group is related to residual or sub-clinical affective symptoms, as persistence is not affected by depression (Kleifield, 1994). Low persistence is not simply an outcome of chronic illness, as low persistence is not found in anxiety disorders

(Fossey, 1995), or OCD (Richter et al, 1996) and persistence is significantly elevated in patients with anorexia (Brewerton et al, 1993).Low persistence is characterized by a tendency to become discouraged and to give up when expectations are not quickly satisfied, rather than persevering despite frustration (Cloninger et al, 1993; 1994). If bipolar patients are low in persistence, it may be hypothesized that they are unusually susceptible to switches between behavioural activation and inhibition when positive reinforcement is intermittent (Osher et al, 1996).

We also found that patients with bipolar disorder are significantly higher on harm avoidance. This implicates that patients with bipolar disorder tend to be cautious, fearful, tense, discouraged, insecure and pessimistic even in situations that do not worry most people. These individuals tend to be inhibited and shy in most social situations. Their energy level tends to be low and unusually sensitive to criticism and punishment. Our results are in accordance with the findings of previous researchers, like Young et al (1995), Osher et al (1996) and Engstrom et al (2004). In our study, we have also found that bipolar disorder patients are higher on pessimism, fear of uncertainty, shyness and fatigability than controls. Our study and other studies (Strakowski et al, 1992; Young et al, 1995; Osher et al, 1996; 1999; Engstrom et al, 2004) of bipolar patients with and without lithium treatment have found similar results in temperament. Our results can not therefore be explained in terms of side effect of lithium treatment.

Though high (Young et al, 1995) and low (Osher et al, 1999) novelty seeking has been found in bipolar disorder patients in previous studies, we didn't find any significant difference between bipolar disorder patients and control group. We did not find any difference between bipolar disorder patients and control group on reward dependence which is in accordance with findings reported by Young et al (1995), though high (Osher et al, 1996) and low (Engstrom et al, 2003) reward dependence has been reported in previous researches.

Moreover, results show that patients with bipolar disorder are significantly lower on self directedness and cooperativeness. This shows that bipolar disorder patients tend to be weak, blaming, ineffective, and irresponsible. They seem to be lacking an internal organizing principle and may also be self absorbed, intolerant, and critical. It was also found that bipolar patients, even when clinically euthymic, continue to describe themselves as pessimistic, having fear of uncertainty, shyness, more fatigability, having less impulse control, more independence, being less responsible, less purposeful, less resourceful, less empathic, helpful, and less compassionate than normal controls. Our findings are consistent with the findings of Engstrom et al (2003; 2004).

A hypothesis has been formulated that specific personality traits can serve as a phenotypic marker for the genetic-neurochemical diathesis to manic-depressive illness (Osher et al, 1996). It implies that bipolar illness can develop in numerous different personalities, but that bipolar patients usually share specific traits. Although we have found some support for this hypothesis, but in our study patients, were not in remission. They were euthymic on the basis of their scores on SIGH-D and YMRS; so whether these findings show premorbid personality of these patients is difficult to determine.

The search for psychological markers for bipolar illness, therefore, is still an ongoing process; the identification of such markers could have important implications for the implementation and evaluation of preventive/early intervention programmes as well as for the mechanisms of genetic transmission of manic-depressive illness (Osher et al, 1999).

CONCLUSION

Thus, it can be concluded that patients with bipolar disorder are higher on harm avoidance and lower on persistence, self-directedness and cooperativeness. Personality may predispose to bipolar disorder or may modify the natural history of illness and response to treatment. A longitudinal follow-up of personality features after remission or a prospective study exploring personality features before the first onset of bipolar disorder would clarify whether the results in the present study

reflect a trait characteristic of patients with bipolar disorder or long lasting personality alteration caused by episodes of bipolar disorder.

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Indian Journal of Social Psychiatry (2009), 25(1-2), 49 - 55.

RESPONSE INHIBITION AND WORKING MEMORY IN DRUG FREE/ DRUG NAÏVE SCHIZOPHRENIA PATIENTS AND THEIR FIRST DEGREE RELATIVES

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ABSTRACT

Background: Studies on schizophrenia have revealed that medication has effects on cognitive functions. The present study was designed to control the effects of medication in order to delineate the endophenotypic value of cognitive functions in schizophrenia. **Method:** Total sample size consisted of 90 participants out of whom 30 were schizophrenia patients diagnosed according to DCR of ICD-10. First-degree relative of these schizophrenia patients comprised the next group (n=30), normative group consisted of 30 individuals. Tests used to assess response inhibition & working memory were Stroop Test and Number-Back Test. **Results:** Significant impairment in response inhibition & working memory has been found in schizophrenia patients which increase with increasing severity of the negative symptoms thereby indicative of deficient information processing ability. Similar sets of deficits are replicated in their first-degree relatives too, indicative of genetic predisposition to schizophrenia. **Conclusion:** The impairments in the domain of response inhibition & working memory are not an epiphenomenona but a stable trait marker and can therefore be regarded as endophenotypic markers.

Key Words: *Schizophrenia, endophenotypes, working memory, response inhibition*

INTRODUCTION

Cognitive impairments are ubiquitous in schizophrenia. They are conspicuous even at the first onset of the symptoms (Braff et al,1991; Saykin et al,1994; Bilder et al, 2000; Cornblatt & Malhotra, 2001; Klosterkotter et al, 2001; Bozikas et al, 2006). Although there is generalized impairment in most of the cognitive domains (Heinrichs & Zakzanis, 1998, Bozikas et al, 2006), yet most impaired performance is observed in response inhibition, working memory, executive functioning, psychomotor speed, verbal memory and attention (Bilder,1992; Saykin et al, 1994; Albus et al, 1997; Censits et al, 1997; Heinrichs & Zakzanis,1998; Aleman et al, 1999; Sitskoorn et al, 2002) and less attenuated in the domains of perceptual and basic language processes (Goldberg et al, 1995; Heinrichs & Zakzanis, 1998). These deficits hamper effective social outcome (Green, 1996). However little is known regarding the nature and extent of these deficits being present in the high risk group of schizophrenia patients. The first degree relatives are the most vulnerable group as the genetic basis of schizophrenia is high and twin and adoption studies have shown heritability estimates upto 80% (Cardno et al, 1999; Sullivan et al, 2003). Therefore, the first-degree relatives would be a suitable candidate for study to estimate whether these cognitive deficits have any endophenotypic value. Endophenotypic markers are characteristics that mark predisposition to schizophrenia (Faraone et al, 1999). For these deficits to be considered as having any endophenotypic value, they should be relatively stable over a period of time and also they should not be secondary to the disease process i.e., they should not diminish with neuroleptic medications. Secondly they should be ubiquitously present in their high risk group i.e., in their first- degree relatives although the severity and the nature may vary. Thirdly although other psychiatric groups suffer from these impairments yet the nature and the extent of these deficits have to be specific to the disorder under exploration. Therefore for any cognitive domain to be considered as a potential endophenotypic marker, it should be present as a trait marker and not a state marker.

Various researches have shown that these cognitive deficits

Accepted on 21th April, 2009

are pertinent even in the relatives of these patients, although present in a milder degree (Kremen et al, 1998; Toomey et al, 1998; Faraone et al, 1999; Cannon et al, 2000; Gilvarry et al, 2001; Toulopoulou et al, 2003). These deficits are more pronounced in discordant monozygotic twins than in discordant dizygotic twins (Goldberg et al, 1995; Cannon et al, 2000) and are conspicuous even in subjects who are at high risk for schizophrenia. Intentional deficits during childhood with at least one affected parent may predict schizophrenia in subjects (Erlenmeyer-Kimling et al, 2000).

Our study aimed at finding neuropsychological endophentotypes in patient with schizophrenia. For this, drug free/naïve schizophrenia patients as well as their adult non-affected first-degree relatives were assessed. The present study was designed to control the effects of medication in order to delineate the endophenotypic value of cognitive functions in schizophrenia.

METHOD

Schizophrenia patients, their first-degree relatives (FDR) and community dwelling normal persons for control served as participants of this study. The participants were informed about the intent of the study and on their agreement (verbal) they were included in the study. None of the participant were paid for participation. Initially, 39 patient-FDR pairs were taken in the study of which nine pairs were finally excluded. Amongst these nine, seven pairs due to the inability of the patients to complete tests (primarily working memory task), one pair due to the patient having impaired visual acuity and one pair due to the FDR's non-willingness for inclusion in the study were excluded. The total sample size consisted of 90 participants out of whom 30 were patients with a diagnosis of schizophrenia who were either neuroleptic free (24 patients) for at least six months or neuroleptic naïve (6 patients) with no history of head injury or any neurological disorder and had at least five years of education. Neuroleptic naïve patients were those who had never been exposed to neuroleptic medications and neuroleptic free patients were those who were drug free for the current illness for minimum three months. The first-degree relatives of these schizophrenia patients comprised the next group (n=30). Only those FDR were taken who had at least five years of formal education, had no history of either substance dependence or any other psychiatric illness. The order of preference for choosing the FDR was same sex sibling, opposite sex sibling, same sex parent and opposite sex parent. The control group consisted of 30 individuals with the same inclusion and exclusion criteria as the FDR group. They were pair matched with FDR on the age, sex and education. The control group was collected from the nearby catchment area. The age range for all the groups was 19 to 50 years.

The sample was collected from the Central Institute of Psychiatry, Ranchi, India between September 2003 and February 2004. The Brief Psychiatric Rating Scale (Overall & Gorham, 1988), the Scale for the Assessment of Positive Symptoms (Andreasen, 1984) and the Scale for the Assessment of Negative Symptoms (Andreasen, 1983) were administered on the patient group to assess psychopathology. The control and the first-degree relative groups were administered General Health Questionnaire-5 (Shamsunder, 1986) to assess their general health and rule out any covert physical illness.

Stroop Color Word Test (Regard, 1981) and Number Back (N-Back) task for working memory were administered on all the participants in order to assess their executive functioning. In Stroop Color Word Test, respondents have to use selective attention and response inhibition to identify ink colour in which the words 'red', 'green' 'blue' and 'yellow' are printed. The scores were calculated as total number of wrong responses and time taken. For the current study, Victoria version (Regard, 1981) was used. It is popular because of its short administration time. Hindi version was used. For interpretation, number of error responses and time taken were counted.

In the Number Back (N-Back) test, both verbal & visual forms were used. In visual working memory, N-Back 1 task, the subject is presented a series of cards consecutively. On each card there is a dot at certain location. The subject is required

to match the location of the dot of present card with the previous card and decide whether the locations are same or different. Since only one card is presented at a time, the subject has to retrieve the location of the dot on the previous card and match it with the present one in the N-Back 2 task, the subject is required to match the dots of alternate cards (dot of card 3 with dot of card 1). The verbal N-Back 1 & 2, uses sounds (e.g., ga, da etc.) instead of using the dots, for stimulus. As far as interpretation of working memory tasks is concerned, thirty trials of each task were taken. For interpretation, number of correct responses for each task were counted.

RESULTS

In socio-demographic variables (Table1), it was found that the groups do not differ significantly with each other on age variable. However, the three groups differed significantly (p< .001) with

Table 1: Group comparison on Socio-demographic variables (N=90)

Variables	Patient n=30(%)	FDR n=30(%)	Control n=30(%)	df	F	p
Socio-economic status						
Upper	1 (3.0)	1 (3.0)	1 (3.0)	2	.523	.77
Lower	29 (97.0)	29 (97.0)	28 (93.0)			
Sex						
Male	27 (90.0)	28 (93.0)	28 (93.0)	2	.310	.856
Female	3 (10.0)	2 (7.0)	2 (7.0)			
Education						
<10th	21(70.0)	15(50.0)	14 (47.0)	2	3.8	.14
>10th	9 (30.0)	15 (50.0)	16 (53.0)			
Marital status						
Single	19 (63)	6 (20)	8 (27)	2	14.06	.001**
Married	11 (37)	24 (80)	22 (73)			
Occupation						
Unemployed	23 (77)	6 (20.0)	5 (17)	6	32.17	.001**
Employed	7 (23.0)	24 (80.0)	25 (83.3)			
Residence						
Rural	15(50.0)	16 (53.0)	7 (23.0)	4	8.42	.077
Urban	15 (50.0)	14 (47.0)	23 (77.0)			

**p is significant at <0.01

Table 2: Inter group comparison on time taken and errors committed on Stroop Test

Variables	Patient n=30 M±SD	FDR n=30 M±SD	Control n=30 M±SD	F (df=89)	p
Stroop Dot	48.60±24.06	47.53±44.17	25.66±8.72	5.78	.004[b2, c2]
Stroop Word	62.33±30.90	54.0±41.19	26.86±7.87	10.89	.001[a2, b2, c2]
Stroop Colour	77.33±41.43	41.63±26.33	35.93±12.06	16.69	.001[a2, b2, c1]
Stroop ERD	1.56±2.35	1.7±3.12	0.10±0.30	4.60	.013[b1, c2]
Stroop ERW	2.16±3.34	2.03±3.56	0.00±0.00	5.52	.005[b1, c2]
Stroop ERC	2.93±4.14	1.76±2.89	0.53±0.86	4.92	.009[b2, c2]

Stroop ERD = Errors committed on dot, Stroop ERW= Errors committed on word, Stroop ERC= Errors committed on color, a2=Difference between patient and FDR p < .01 level, b1 Difference between group I and III p < .05 level, b2 Difference between group patient and control p < .01 level, c1Difference between group FDR and control p< .05 level, c2=Difference between group FDR and control p < .01 level

Table 3: Inter group comparison on N-Back Test

Variables	Patient n=30 M±SD	FDR n=30 M±SD	Control n=30 M±SD	F (df=89)	p
N-Back verbal 1	23.3±6.3	27.36±2.48	28.83±1.66	15.02	.001[a2,b2]
N-Back verbal 2	21.16±5.68	24.16±2.9	25.7±2.57	10.06	.001[a2,b2]
N-Back visual 1	22.73±5.5	24.63±3.83	26.0±2.97	4.78	.011[b2]
N-Back visual 2	20.20±5.06	21.3±3.69	23.13±3.27	3.94	.023[b2]

a2 Difference between group patient and FDR p<.01 level, b2 Difference between group patient and control p<.01 level

each other on marital status and occupation and the patient group was the most compromised on these variables.

Patient group had poor performance on all types of executive function tasks. FDR group has also mirrored this pattern of deficits. Nevertheless, these deficits are in selective domains. Stroop test was used to assess selective attention and response inhibition (Table 2).

In the dot condition, both patient as well as FDR group had performed poorly with no difference in the performance of FDR as compared to the patient group. Their performance differed significantly as compared to the control group ($p < .01$). In the word condition, both the patient as well as the FDR group has performed poor as compared to the control group ($p < .01$).

Patient group on both verbal and visual N-Back task as compared to normal control had a low mean score, which shows poor performance of the patient group ($p < .01$). FDR group has performed in the moderate range (Table 3).

Table 4: Pearson's product moment correlation of executive function measures with the scales assessing psychopathology

Variables	BPRS r	SANS r	SAPS r
Stroop Dot	-0.04	0.58**	-0.03
Stroop Word	0.29	0.21	0.05
Stroop Colour	0.12	0.29	0.03
Stroop Error Dot	0.07	0.23	-0.22
Stroop Error Word	-0.11	0.34	-0.17
Stroop Error Colour	-0.07	0.25	-0.15
N-Back verbal 1	-0.02	-0.40	-0.18
N-Back verbal 2	-0.31	-0.27	-0.28
N-Back visual 1	-0.01	-0.31#	-0.12
N-Back visual 2	-0.12	-0.46	-0.24

* p=<0.05, * *p=<0.01, #Trend towards difference

BPRS= Brief Psychiatric Rating Scale, SANS= Scale for Assessment of Negative Symptoms, SAPS=Scale for Assessment of Positive Symptoms

Negative symptoms have been found to be positively correlated with time taken on Stroop D ($p<0.01$) (Table 4).

DISCUSSION

In this study we used tests of executive functioning in order to assess these functions in patients group as well as their first-degree relatives. We used neuroleptic free/naïve patients as drugs can have a confounding effect. There are studies indicative of facilitative effect of medication on performance of patients on cognitive tasks (Keefe et al, 1999; Kern et al, 1999). Response inhibition has been found to be impaired in these patients with schizophrenia as revealed by poor performance on Stroop test, and Number-back test. This could be due to deficient working of the central executive system of the working memory resulting in an inability to allocate attention resources during task performance. This leads to deficits in not only selective attention but in inhibition too, thereby rendering oneself more susceptible to interference. This must have resulted in increased number of errors and time taken on Stroop test. This is in agreement with the previous researches on schizophrenia that these patients have an increased susceptibility to interference and deficits in inhibition processes that are actively involved in selective attention (James et al, 1989; McGrath, 1997; Barch et al, 1999; Dollfus et al, 2002, Zalla et al, 2004). Impaired performance of the patient group on working memory tasks is indicative of poor functioning of the articulatory loop and visuo-spatial sketchpad. Inability to store information in the short-term memory shows a decline in performance suggesting impaired ability of the articulatory loop to hold information and impairment to process and store visual material. Perry and Braff (2001) have found similar deficits in the working memory in schizophrenia patients.

The first-degree relatives (FDR) shown a relatively better performance than their affected probands but deficit is apparent when compared with normal controls. Deficits have been found in the area of selective attention and visual scanning assessed by Stroop test. Working memory, however, has been found to be relatively intact in the FDR group as compared to response inhibition which has been found to be relatively impaired. These findings are in agreement with the previous research done on FDR where executive functions like response inhibition, working memory and attention have found to be impaired (Faraone et al, 1999; Saoud et al, 2000; Conklin et al, 2000; Egan et al, 2000; Egan et al, 2001; Appels et al, 2003). This demonstrates strong genetic linkage of this

illness thereby rendering non affected FDR to be more vulnerable.

Impairments in information processing, leads to attentional deficits, which becomes all the more apparent, with increase in the severity of negative symptoms. Therefore negative symptoms have been found to be positively correlated with time taken on Stroop D. This has been found by other researchers whereby stimulus surplus results in cognitive fragmentation in schizophrenia (Nuechterlein & Dawson, 1984; Braff et al, 1991; Frith, 1992; Basso et al, 1998), Schizophrenia patients with negative symptoms fail on test, which requires them to generate an action based upon an internal goal (Frith et al, 1992).

Cognitive deficits are hallmark of schizophrenia and have been found pervasively at both the onset of illness and in chronic community dwelling cases (Morrice & Delhunty, 1996; Hutton et al, 1998). Since medication played a confounding role in establishing whether these deficits were a state or trait marker, therefore our study was done on neuroleptic free/ naïve patients. The nature and the extent of the deficits confirm the fact that these deficits are not just an epiphenomenona but also a stable trait marker. Cognitive phenotypes identify distinct, familial traits associated with schizophrenia and can be regarded as neuropsychological endophenotypic markers.

Limitation of the study was that female subjects were not included and illiterate subjects were not included. Also one test was used for the assessment of both response inhibition and working memory.

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Indian Journal of Social Psychiatry (2009), 25(1-2), 56 - 60.

Brief Communications..

ROLE OF PSYCHOLOGICAL ASSESSMENT IN ADULT PATIENTS WITH PSYCHIATRIC DISORDERS: THREE CASE REPORTS

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ABSTRACT

Background: Psychological assessments are often used with adult patients in order to understand psychopathology, personality dynamics and to provide diagnostic clarity. Sometimes assessments aid in therapy as well, though this application may not be obvious in routine clinical discussions. Moreover, except for rating scales, psychological assessments are rarely utilized in the post intervention phase. **Method:** Three case reports are presented in this article. These highlight the complex role of psychological assessments in the management of patients with psychiatric disorders. Assessments were carried out on these patients at a mental health institute. Case 1 was an outpatient while case 2 and case 3 were inpatients with diagnoses of schizophrenia and dissociative disorder respectively. The assessments were for diagnostic clarification, evaluation of stressors to facilitate therapy and reassessment post treatment respectively. Projective tests as well as self-report scales were utilized in this process. **Results:** Across the three cases, projective tests were found to be very beneficial. These case reports also illustrate that assessments not only help in diagnostic clarification, but also create a focus for therapy and provide indicators for prognosis. **Conclusion:** The article emphasizes the need to widen the role of assessments in clinical practice.

Key words: *Assessment, Psychological, Schizophrenia*

INTRODUCTION

Patients seeking help from a psychiatric set-up usually receive assessment and intervention sessions from various mental health professionals like social workers, nurses, doctors, and psychologists. They use various assessments, defined as the "procedure by which clinicians, using observation, interviews, and psychological tests, develop a summary of the client's symptoms and problems in order to develop treatment and other decisions" (Butcher, 2000). However, psychological assessment, also referred to as psychodiagnostic assessment, is provided by clinical psychologists. Initially, the role of the psychologist was conceptualized as one in competition with the psychiatrist in reaching an accurate diagnosis and describing ways in which symptoms find expression (Hadley, 1958). Many practitioners continue to use this approach for assessment even today. Psychological tests are "techniques for discovering what, how, and why of a person's behaviour" (Hadley, 1958). Watson (1951) warns against a narrow conceptualization of a diagnosis and opines that a psychologist "wears spectacles of a focal length different from those of the psychiatrist". Current view is that test data can be used for classification, description, prediction, intervention planning, and tracking (Maruish, 2004). Yet, in general, a routine psychological report clusters data on classification and description, predominantly the former. There is very minimal attention on intervention planning and prediction.

Yet, usually test data is rich enough to facilitate decisions on therapeutic goals, processes and approaches. Sechrest et al (1998) consider tests to be not only efficient observation procedures facilitating diagnostic formulation of patient behaviours but also having relevance for therapists. Possibly, one facet of test data ignored by psychologists is the ability to reveal cryptic conditions i.e., aspects of self that the patient is unaware of. This is especially true of projective measures (Sechrest et al, 1998). In clinical practices in India, it is quite common to use objective as well as projective measures as they yield richer information than tests from a single category (Kalra, 2006).

 Accepted on 10th June, 2009

This paper shows the relevance of multimodal approach in planning assessments. It not only confirms the role of tests in providing clarity on clinical presentations but also shows its role in immediate psychotherapeutic treatments as well as its value for long term prediction of psychosocial aspects of functioning. Three case reports are presented to show the scope of assessment in patient care and management within the psychiatric set-up.

CASE REPORTS

The three cases reported here were patients at the National Institute of Mental Health and Neuro Sciences (NIMHANS), Bangalore. The treating team for all three patients was the same. It included psychiatrists, psychologists, psychiatric social workers and psychiatric nurses. In all three cases, assessment was carried out by the same professional-in-training and supervised by a consultant faculty psychologist. The details of the cases are as follows:

Case 1: S.R. was a 21 year old unmarried male diagnosed with schizophrenia since one year at another mental health institute. Presenting complaints included academic failure and discontinuation of studies, increase in social withdrawal, and decreased communication with parents. On clinical evaluation at NIMHANS, no psychotic symptom was found. Instead of that, affective symptoms such as sadness and avolition were reported, although they were not severe enough to warrant a syndromal affective disturbance diagnosis. He was on antipsychotic medications which had failed to bring about any improvement. Thus in the absence of psychotic symptoms and treatment failure, the use of medication was to be re-evaluated. As S.R. was not very expressive, psychological assessment was planned to rule out psychosis and for diagnostic clarification. Assessment was carried out on an out-patient basis and a battery of tests was administered. Various tests were administered including intelligence and memory tests, self-report scales and projective measures. Assessment was carried out in Hindi and English, over 3 sessions across 8 hours. Patient was cooperative for testing and no major impediment was encountered during assessment.

Case 2: G.H. was a 27 year old married female who presented with episodes of dissociation since the age of 15 years. The course of her illness was fluctuating with increased frequency of episodes for 3 months. A diagnosis of dissociative disorder was made. At the time of admission, she was on antiepileptic medication prescribed by a medical professional at another institute. On examination at NIMHANS, epilepsy was ruled out. Interviews with patient and family members did not reveal any significant stressor. Marital and family life were reported to be satisfactory. Assessment was carried out 5 days after admission, along with initial sessions of psychotherapy. This was specifically planned as it was felt that the patient had to be emotionally prepared to participate in the tests. Moreover, a good rapport with the examiner/therapist can facilitate productive protocols. The aim of assessment was to identify stressors contributing to dissociation. An assessment battery involving both objective and projective measures was planned. Assessment was conducted in Telugu over two hours in one session. However, assessment could not be completed due to the occurrence of an event during testing. Patient, however, remained as an inpatient for about one month during which time psychotherapy sessions were provided to her and antiepileptic medications were tapered and stopped.

Case 3: H.P., a 29 year old female, was suffering from schizophrenia, paranoid type, for 10 years and was under treating team's care for many years. Since the previous admission, few months ago, patient had resumed working and had adequate socio-occupational functioning. However she began showing a gradual decline in functioning with concomitant symptoms of delusions of misinterpretation, persecution, reference, dysmorphophobia and auditory hallucinations, mandating hospitalization. On previous admission, psychological assessment was done to evaluate diagnostic and personality factors. During the current admission, reassessment was planned to examine psychotic processes and to re-evaluate personality and interpersonal

functioning since previous assessment. Assessment was carried out in English over 2 sessions (5 hours) utilizing both projective and self report measures.

DISCUSSION

Assessment was found to be beneficial for all the patients. Of special significance were the results from the projective tests. The discussion for each case is as follows:

Case 1: Diagnostic clarification from assessment records showed that S.R. was free of psychotic and depressive tendencies. Interestingly, there were reports of specific fears on projective tests such as on the Sentence Completion Test (SCT). Difficulties were evident in personality and interpersonal functioning. There were substantial conflicts in relationships with parental and authority figures, as interpreted from the Thematic Apperception Test (TAT) and SCT. Parents' considerable disapproval of patient's behaviours was also obvious. On the Rorschach Ink Blot Test (RIBT), S.R. was found to be introversive. On objective self-report measure (Multiphasic Questionnaire - MPQ), S.R. was found to adopt a repressive coping style. It appeared that in conflict situations, S.R. tends to withdraw and rely on himself. However, the confusion in self-concept, as obvious from SCT and 16 Personality Factors Test (16 PF) prevents successful coping. Final impression was that the patient's socio-occupational decline may have been due to personality and interpersonal factors rather than due to any psychotic illness.

Given this reformulation of the presenting symptoms, schizophrenia was ruled out. Antipsychotic medication was stopped and psychotherapy was initiated. As a consequence, both S.R. and caregivers (parents) were reassured of a favourable prognosis. This helped decrease the stress experienced by the family. Therapy sessions with the patient focused initially on reorienting S.R. to short-term life goals. Subsequently, personal goals of the patient were explored and everyone was guided to improve communication patterns within the family.

Case 2: Assessment with G.H. began with the administration of a self-report measure (MPQ). Patient was then administered TAT. G.H. provided concrete and brief stories to cards I and II. Soon after being shown card III, patient threw the card across the room in anger and placed her head face down on the table. The examiner attempted to inquire on G.H.'s status, to which she was not responsive. She then ran towards her ward and had a dissociative episode midway. On regaining consciousness, patient did not respond to any interaction and went directly to sleep. G.H.'s caregiver (sister) was informed of the episode. Although on the next contact with the examiner G.H. did not indicate any awareness of the episode, she did remember the episode gradually over the next few sessions. Patient then began to frequently demand for the card from the examiner stating that it was a "photo" of her and her mother. Further exploration showed that G.H. had not been able to accept loss of mother due to suicide when G.H. was 7 years old. There were feelings of anger and loss which were never expressed to any of the family members. Assessment was discontinued as patient was expressing distress over mother's death and remained preoccupied with it. These disclosures created a more specific context for psychotherapy sessions.

The focus of psychotherapy then remained on issues related to the loss of the mother. G.H. was also encouraged to learn adaptive coping skills such as communicating distress with family members, engaging in activities of interest, and improving life style. Through the course of the sessions, patient showed a decline in the frequency of dissociative episodes. On admission, she was found to have around 7 to 8 episodes a day, while on discharge she was found to experience around three episodes a week. Follow up out-patient sessions further brought down the frequency of the episodes and these stopped completely over a month. Patient also reported improved quality of life, greater self confidence, and ease in managing responsibilities independently. She also discovered certain specific goals for her future such as completing her education. Though the overall plan of assessment remained incomplete, use of projective test

changed the understanding of patient's psychopathology and provided clarity for psychotherapy.

Case 3: The baseline and reassessments of H.P. were separated by a period of 4 months. Both assessments were carried out across 2 sessions and included personality and diagnostic testing utilizing projective and non-projective (objective) measures. On reassessment, a projective test (TAT) replaced an objective self-report personality test (16 PF) administered on baseline assessment as insights into interpersonal factors mediating patient functioning were required. Diagnostic measures used during reassessment were Object Sorting Test (OST) and MPQ to help evaluate psychotic tendencies. Two of the tests administered on the first assessment Beck Depression Inventory (BDI) and SCT were repeated on the second assessment as well.

On the baseline assessment, H.P. had shown anxiety regarding marriage prospects and managing a family. She had ambivalence in her attitude towards her father, whereas her relationship with her mother was reported to be cordial. There were difficulties in interacting with male supervisors at work. However her overall outlook on the future was optimistic.

On the current assessment, psychosis was not evident on the protocols. Although there were some peculiarities and overinclusion in thought processes, conceptual thinking was intact. Multiple specific fears and guilt were evident on projective measures (TAT, SCT). Assessment of personality and interpersonal factors revealed that H.P. tended to somatise (MPQ) with poor illness adjustment (SCT). However, the optimistic orientation found on the previous assessment was obvious even in the current assessment. She also had specific goals of pursuing a career and getting married (SCT, TAT), in contrast to the previous assessment. With regard to family functioning, patient continued to share positive relations with her mother although her relationship with her father had become more conflictual. She expressed concerns regarding her father's lack of "love" for "her marriage", lack of approval from her father, and felt brother was favoured by father (TAT, SCT). The difficulty in interacting with male authority figures and her disapproval of perceived inferiority of women remained as major interpersonal issues. She also hoped to be treated with "consideration" by male authority figures (SCT).

Across the two assessments there were changes in relationship with father, views on gender inequalities and marital life. These were used as prognostic indicators for relapse and quality of life. It was hypothesized that father's criticality (expressed emotion) regarding H.P. is likely to contribute to relapse of symptoms. With regard to marital and professional life, it was speculated that her difficulty with perceived gender equalities would interfere with optimal functioning in these areas. Hence, apart from the routine management of H.P.'s psychotic illness, the areas highlighted in the assessment were to be addressed in future management. Six months later, the patient took readmission. Psychotic symptoms were controlled but interpersonal issues at work were prominent and patient sought cognitive behaviour therapy to improve functioning

Thus, assessments with three patients show how these procedures can provide unique knowledge for diagnostic reformulation, plans for therapy, and prognostic evaluation. The interpretations from projective tests were particularly significant in all the three cases. Maruish (2004) also opines that assessments facilitate clinical decision making, treatment process, and outcome evaluation. Further, he encourages the utilization of assessments from "being a mere tool for describing an individual's current state to being a means of facilitating treatment and understanding behavioural health care problems throughout the episode of care and afterwards". In our work, assessment was useful in reframing the problem (S.R.), creating focus for therapy (G.H.) and deriving indicators for prognosis (H.P.). Here, assessments did not merely aim at giving labels that agree with other clinical impressions (Hadley, 1958). Psychological assessments contributed knowledge from domains not easily accessible through clinical interviews. Through feedback of findings to S.R. and parents, the stress experienced by everyone in the

family was significantly reduced. Intervention became focused for G.H. due to the knowledge gained from assessment. For H.P., assessment helped to create clinically useful data for further management. Although only three cases are presented here, these illustrate the scope for widening the role of assessments longitudinally in the course of treatments as well as in the initial phase of therapy.

The case reports also show that projective tests can have therapeutic value though they are viewed controversially. Lichtenberg (1985) opines that the distinction between classification of tests as projective and non-projective does not seem viable and it is more reasonable to distinguish between aspects of specific tests and their contribution in the assessment process. Watkins (1991) concludes from surveys on psychological assessment that academic clinical psychologists are disapproving of projective tests, hence the decline in use of projective tests in research studies along with the simultaneous prominence of objective tests. In contrast to the above trends, we found that it is the projective tests that made significant contributions for all the cases presented here. Yet, there is evidence for our perspective as well from an experimental study where participants were found to be more accepting of interpretations from projective tests than objective tests (Snyder, 1974). The author attributes this to the mystery behind projective tests in contrast to a sense of control over what is revealed in objective tests. Overall, it appears that in clinical practice, projective tests are as valuable, if not more, than objective tests.

Psychological assessment can be equaled with therapeutic assessment, specially when it helps in detecting problems and provides motivation for therapy (Kalra, 2006). Though this article is not based on a systematic research, the cases illustrate a broader role of psychological assessments in clinical practice and a need to build a larger body of contemporary knowledge in this area.

This manuscript is based on a paper presented at the 35th National Conference of Indian Association of Clinical Psychology (NCIACP) at Hyderabad, January 2009

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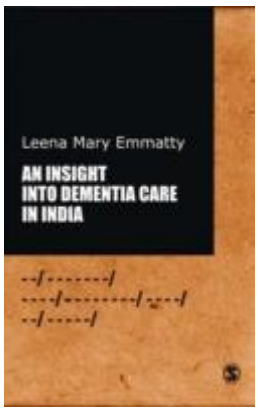
Indian Journal of Social Psychiatry (2009), 25 (1-2), 61 - 62.

Book Review...



Title : AN INSIGHT INTO DEMENTIA CARE IN INDIA
Publisher : SAGE PUBLICATIONS, NEW DELHI
Year : 2009
Author : Leena Mary Emmatty
Price : Rs. 240/-

INTRODUCTION

With rapid advances in medical science towards the later part of the last century and consequent increase in human longevity, there has been a significant increase in the elderly population, even in developing countries like India. The increase in geriatric populace has led to a surge of medical conditions unique to this age group. Dementia, the disease of the aging brain, is one such neuropsychiatric condition which has drawn the attention of mental health professionals worldwide. Dementia is not only an important problem in our country but the nature of caregiving is also family based in contrary to predominant institution based care in the west. Unfortunately, the literature on dementia care in India is sparse. Leena Mary Emmatty, a licensed social worker in USA, with several years of research and field experience in dementia care in India, tries to fill this void through her book.

The book begins with an overview of dementia including its definition, classification and various epidemiological studies in the west as well as in India. This part is brief, simplistic, yet includes most of the necessary information to create a picture of what dementia is all about. Frontotemporal dementias, the group which comprises the third most common cause of dementia worldwide, deserved to be included in this part. The most important reason for its inclusion could be the fact that it has many atypicalities in its presentation: relatively younger age of onset, behavioural problems preceding memory problems, being often confused with psychiatric conditions and following a rapidly downhill course. A brief outline of psychiatric comorbidities like depression and psychosis was also essential in this part as these conditions frequently complicate the course of dementia and cause additional strain to caregivers.

The second part deals with caregiving proper and its various aspects. The author starts with an outline on caregiving practices, discusses the changing scenario of caregiving in India and finally, goes deeper into the day to day aspects of the vagaries of caregiving. The traditional Indian culture imposes the role of caregiver on women whereas the growing influence of western culture is gradually leading to erosion of this group due to increase in number of employed women. This predicts an acute shortage of traditional caregivers in India at a time when institutional care is still in its infancy. The chapter on "daily chores and caregivers" is an excellent take on how the gradually deteriorating mental faculties of the patient place increasing demands on the coping reserves of the caregivers and how a detailed understanding of impairments in activities of daily living would help them fare better. This chapter also points out how caring for a dementia patient is much more strenuous in comparison to other chronic diseases. Rewards of caregiving, unlike its commonly highlighted negative consequences, has been a welcome addition although this portion deserved a more elaborate treatment rather than a few sketchy paragraphs. The section on " perceptions regarding caregiving" would provide clarity if numericals (in terms of percentages) could be used instead of words like "some", "few" and "more".

The third part of the book deals with "stress, coping and social

Accepted on 24th June, 2009

support" of caregivers. The first chapter delineates various aspects of psychological distress faced by caregivers in India. An interesting finding highlighted by the author is the fact that caregiving involves a significant stress in the initial stages but over a period of time, the caregiver adopts various coping strategies to relieve the stress. Other salient features include greater stress on older individuals, spouses, females, the employed and those of low socioeconomic and poor educational status. The next chapter delves into various coping strategies adopted by the caregivers. Quoting the results of her own study, the author opines that unlike established findings from literature on coping, emotion focused coping was found to be more effective in dementia care since the unalterable nature of the circumstances deemed problem focused coping to be counterproductive. The final chapter on the role of social support reveals another startling fact. The author's study findings were unable to find any significant role of social support in relieving the psychological stress of dementia caregivers. Thus, this part of the book throws light on several startling facts regarding coping and social support of dementia caregivers in India which stand in contrast to existing literature.

The fourth part of the book deals with the available treatment approaches for the patient, the caregivers and the affected families as well as mentioning the institution-based options accessible to the families. The first chapter outlines the modalities of assessment for the patient and the caregiver. It goes further to describe the psychosocial interventions that might help relieve caregiver burnout. The second chapter briefly mentions the diverse modalities of psychosocial management available for dementia patients. This chapter could be more meaningful if the available interventions could be discussed in the light of established evidence in favour of each. Otherwise, the menu of options appear confusing to the reader. The final chapter on the existing resources in India is valuable and handy for all those related to and interested in institution-based dementia care in this country. Although thriving on the unrelenting efforts of few individuals and restricted to few pockets, these institutions are going to play a major role in dementia care in India in the days to come. One major drawback of this part of the book is the author's complete omission of the pharmacological management of dementia. Inspite of their limited role, medications remain the first line of management in most of the cases. A brief mention of the available drugs and their common side effects was essential to give the readers a complete understanding of the treatment of dementia.

The concluding part deals with suggestions to equip professionals to handle the growing menace of dementia more efficiently. The author puts forward suggestions to incorporate various aspects of gerontology in graduate and post graduate curricula to achieve this end. She also proposes training modules like stress management and behavioural approaches for professionals working in this field. Potential areas for future research are also put forward. The final chapter on "parting thoughts" is touching! It condenses the wisdom gained by the author following several toiling years of research on dementia caregivers: if one learns to look at the positive rewards, it would make the whole experience meaningful.

The author has started from an overview of dementia, proceeded through various aspects of caregiving to finally deal with management. Thus, the continuity has been nicely retained throughout the book. Simplicity of language and explanation of technical terms in most places have made the book less esoteric and readable to non-professionals related to dementia care. Nonetheless, a glossary of technical terms compiled at the end of the book could have served this purpose even better. An index of various terms used in the book could be a ready reckoner for the readers. The readers would find the appendix listing professionals and institutes related to dementia care very useful. Overall, mental health professionals, researchers and individuals related to dementia care would find this book helpful. The author does emerge successful in her objective of providing "an insight into dementia care in India".

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Indian Journal of Social Psychiatry (2009), 25(1-2), 63 - 64.

COPING WITH CHRONIC MENTAL ILLNESS

The article that follows is a part of the Indian Journal of Social Psychiatry's (IJSP) Memoirs series. We hope that mental health professionals will take the opportunity to learn about the issues and difficulties confronted by the patients. In addition we hope that these accounts will give patients and families a better sense of not being alone in confronting problems that can be anticipated by persons with serious emotional problems. We welcome other contributions from patients, ex-patients or family members.

Clinicians who see articulate patients should encourage these patients to submit their articles to Editor, IJSP, Memoirs, Central Institute of Psychiatry, Ranchi-834006—The Editors

A psychiatrist once compared my mental illness to diabetes. He said- 'you have a chronic illness for which you have to take medication throughout your life as it will keep your illness under control'. Before I really understood psychiatrist's advice, many years had gone by and I had to be hospitalized many a times. By the time I realized gravity of the illness, I noticed that neither medicines nor therapy was the only answer to my illness. Finally, I have understood the will to fight out the disease as with diabetes. Of course, for my illness, like diabetes, medicines have an important role to play to keep me going.

I come from a business class orthodox family- while studying in school and college I never had any feature suggestive of mental illness. Looking back, all I recollect is that I always had been enthusiastic, confident and outgoing person. When I was of 21 years of age, suddenly for no reason I felt sadness creeping into me with disturbed sleep, no energy and lack of interest in any of the activities. I took help of a physician who prescribed imipramine for a few months. I must say imipramine helped me a lot and I was able to join family business. I remained free from mental illness for next three years during which I married and had two children. Suddenly, at the age of 24 years, my confidence level grew leaps and bounds with many business plans in my head. During this period I felt energetic, expansive, outsmarting others with decreased need for sleep. During this phase, I was for the first time in my life taken to a psychiatrist who diagnosed me of having manic depressive psychosis and I was put on lithium and haloperidol. Fortunately, I recovered soon but had no desire to continue medicines. After three months, I stopped all the medicines on my own. Soon, I had yet another breakdown during which I had expansive mood, regained high level of energy, anger outbursts and a feeling of owning state run railways-in fact, I stopped one train for fifteen minutes at an important railway station. I was admitted to a psychiatric hospital for six weeks during which I underwent a course of lithium, haloperidol and counselling. At the time of discharge, my illness was compared to diabetes. Since then I have been admitted to many psychiatric centers for various periods of time.

Now I am a middle aged man of 48 years of age running a successful business on my own, having good family support and friends to count upon. On introspection, I have several things in place that have provided me with the support system that I needed. Few of the relevant issues are as follows:

Psychiatrists

I have been fortunate to have very good psychiatrists who have been not only therapists but my mentors and friends. I really needed their support as I was cut off from my friends and family members for their harsh comments. Weekly or monthly follow up became a high point in my life. I relied heavily on my doctors to serve as good friends as well as link with the society. On the negative side, I wish some of my doctors would have shown more faith in me. One doctor told me the only job I could do was of a storekeeper in my own family's business. Some psychiatrists were very harsh, critical and distant.

Medications

Medications have been serious and complicated issue for me which I resisted taking for years believing I wasn't sick. Unfortunately, it did not work out and I always had to get admitted in a psychiatric hospital. Since one of my goals has been to stay out of hospital, I take medicines regularly. I also realized over the years that lithium is one of the medications which has really helped me and now I counsel other patients to take medicines as prescribed by good psychiatrists.

Social Support

Though I come from so called joint family but this illness has taught me few harsh facts of life. Your own relatives and friends distance themselves once they know that you are sick. I have made constant conscious effort to maintain these relationships. It provides a sense of being, belonging and acceptance in our lives.

Stigma

I have been stigmatized and know the shame, humiliation, rejection and confusion that occur when people find out that you have a mental illness. It still prevails but one has dispelled this by more awareness programs.

Cost factor

I can very well afford to pay to my psychiatrists and for medicines prescribed. But for those who are poor, some sort of assistance is needed at Government level.

Today, I am a successful businessman and hold optimistic views about my future. While interacting with my clients, I see few persons with illnesses and situations which are not so different from my own. I sincerely hope that this story of mine has some meaning for such people.

Name withheld on ethical ground

INSTRUCTION FOR AUTHORS

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The text should be written in grammatically correct good English. It should be typed double-spaced throughout with at least 1 inch margins on all sides.

Pejorative Language: Do not use pejorative labels like 'schizophrenics', 'psychotics' and 'neurotics'. Instead refer to 'patients with schizophrenia', etc.

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Bhugra, D. & Mastrogianni, A. (2004) Globalization and mental disorder: Overview in relation to depression. British Journal of Psychiatry, 184, 10-20.

Rosenberg, A.A., Solarz, A.L., Bailey, W.A.(1991) Psychology and homelessness: A public policy & advocacy agenda. American Psychologist, 46, 1239-1244.

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