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MESSAGE

Congratulations to the editors of the *Indian Journal of Psychological Science (IJPS)* and the executive board of the National Association of Psychological Science on the publication of the first issue of *IJPS*. The journal fills an important niche for publication of psychological research conducted in India and is critical to the advancement of psychology as a science within India and around the globe.

Bonnie Kaul Nastasi, PhD
Associate Professor of Psychology
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Message

I am very happy to note that the INDIAN JOURNAL OF PSYCHOLOGICAL SCIENCE is essential to the existing research world of psychology. In India day by day psychological researches getting momentum and new outcomes are occupying prominent place in the print and electronic media. This new journal may satisfy the need of the researchers to publish their research contributions.

I hope that this journal will certainly take care of the quality concern as well as give place to the new additions in the field of psychological researches. It may also encourage the young psychologists to come forward to make use of the opportunity to publish their quality work.

The team of experts involved in the process editorial of are taking care of all necessary measures to maintain the standard of publication to meet the international requirements.

I appreciate this new endeavour.

All the best

Dr. Panch. Ramalingam

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Specimen references:

Kumar, R. & Lal, R (2006). Role of Self e-fficacy and gender differences among adolescents. *Journal of the Indian Academy of Applied Psychology*; 32, 345-350.

Lal, R. & Kumar, R. (2007). Vigilance in children as a function of psychoticism and intelligence. *Indian Journal of Psychology and Mental Health*, 1, 77-85.

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Depressive Symptoms among American and Indian College Students

*V.V.Upmanyu **Sushma Upmanyu ***Roshan Lal

**** D. Lester *****Jasbir Singh

Abstract

The current study was designed to examine depression in relations to gender, sex-role orientation and hopelessness. 142 American college students and 200 Indian college students were administered Beck-Depression Inventory, Beck-hopelessness Scale and Bem Sex Role Inventory. In this study hopelessness emerged as the most salient factor underlying depressive tendencies in college students across sex and culture. The study concluded that high hopelessness may be considered as a legitimate target for therapeutic intervention.

In the past few decades, much research as well as numerous popular books, articles and commercial intervention services have emerged in the area of depression because its prevalence is increasing at an alarming rate in most geographical areas of the world. The most significant features of researches in the area of depression in the recent past, include, first of all, the growing scientific and clinical conviction that there is a sharp increase in the incidence of depression in adolescent years (Charoensuk, 2007; Essau & Petermann, 2000; Koenig, Isaacs, & Schwartz, 1994; Upmanyu & Upmanyu, 1994; Brooks-Gunn & Petersen, 1991; Rutter, 1991; Kashani et al. 1987). Second, gender differences in the prevalence, severity, and expression of depressive tendencies are also well documented during adolescence and adulthood (Rudolph & Clonley, 2005; Kim, 2005; Kovas et al. 2003; Casper, Belanoff, & Offer, 1996; Koenig, Isaacs, & Schwartz, 1994; Baron & Peixoto, 1991; Allgood-Merten, Lewinsohn, & Hops, 1990; Nolen-Hoeksema, 1990; Kandel & Davis, 1982; Teri, 1982).

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In the context of gender differences, a substantial body of literature in the last decade reveals preponderance of female depressives in the United States and in most Western countries (Casper et al. 1996; Koenig et al. 1994; Baron & Peixoto, 1991; Allgood-Merten et al. 1990; Nolen-Hoeksema, 1990), while the Western pattern of gender difference appeared to be reversed to a male predominance in some clinical samples from Africa and India (Upmanyu & Upmanyu, 1993; Weissman & Klerman, 1977). Although published reports have consistently shown that the prevalence of depressive symptoms differ by gender, the magnitude of the gender differences varies somewhat across studies and may be a function of the depressive measures employed and the populations studied (Verma, 1995; Amenson & Lewinsohn, 1981)

To understand why men and women differ in depressive tendencies, a number of explanations ranging from biological to environmental have been proposed in the literature. The artifact theory explaining the difference as resulting from sex-bias of women's help seeking behaviour and willingness to acknowledge depressive symptoms did not find support in the available research data (Koenig et al. 1994; Nolen-Hoeksema, 1987; Amenson & Lewinsohn, 1981; Smith, 1980,). However, in our heavily 'gender-oriented and gender-marked society, men and women's sex-role orientations are echoed in the proliferating depression literature to address the issue of gender difference in depressive symptoms.

The traditional view typifying congruence between gender and sex role (masculine males and feminine females) as a predictor of psychological well-being did not find much support in the recent literature because gender roles have changed dramatically within the last few decades and in recent times researches (Berzins, Welling, & Wetter, 1978; Spence, Helmreich, & Stapp, 1975; Bem, 1974, 1975) have tended to deny the existence of masculinity and femininity as a single continuum.. It was in the mid-seventies, however, that the acceptance of masculinity and femininity as two orthogonal dimensions gave momentum to recent research into sex roles emphasising sex-typed versusrogynous individuals. Since then, numerous studies have reported findings that psychological adjustment (behavioural flexibility, achievement motivation, self-esteem)

V.V.Upmanyu, Sushma Upmanyu, Roshan Lal, D. Lester, Jasbir Singhs will be greatest in men and women with a high number of both masculine and feminine traits, presumably because of the appropriateness of balanced and adaptable character structure in comparison to the one sided masculinity or femininity of the sex-typed individual (Spence, Deaux, & Helmreich, 1978; Spence & Helmreich, 1979; Bem & Lenney, 1976;. Bem, Bartyna, & Watson, 1976; O'Connor, Mann & Bardwick, 1978). Recent research, however, found no convincing support for androgyny theory. Instead, studies have shown that masculinity was strongly associated with positive affectivity or subjective well-being for both sexes (Craighead & Green, 1989; Baldwin, Critelli, Stevens, & Russell, 1986; Lubinski, Tellegen & Butcher, 1983; Taylor & Hall, 1982). Research re-ported for adults suggests that a women's adherence to the 'expressive', trait of the feminine sex role (high femininity, low masculinity) is one of the critical variables influencing her vulnerability to depression (Napholz, 1994; Tinsley, Sullivan-Guest, & McGuine, 1984; Berzins, Welling, & Wetter, 1978; Glenn, 1975).

Although much of the recent evidence is in favour of the competency-oriented masculine attributes (instrumentality) for psychological well-being, the results are not compelling that favours one position over the other across different populations. The current studies have primarily laid emphasis only on sex-role orientation to depressive tendencies, with a consequent neglect of probably the most important variable of hopelessness derived from the cognitive perspective. This seems to be an important methodological flaw because hopelessness has been found to be the most influential predictor of depressive tendencies in adults.

The crucial question for the, gender difference centers around the contribution of masculinity/femininity in depressive tendencies across different levels hopelessness. Thus, the intent of the present study was explore the relationship of sex, sex-role orientation and hopelessness with depressive tendencies in nonclinical sample of adolescents in a cross cultural perspective.

METHOD

Sample

142 American college students (71 males, 71 females) and 200 Indian college students (100 males, 100 females) participated in the current study. For

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American and Indian sample, the mean age was 22.46 (SD = 4.45) and 20.14 (S.D =3.14), respectively.

Tests Used

Participants in group settings completed Bem Sex-role Inventory (BSRI : Bem, 1974), Beck Depression Inventory (BDI: Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and Hopelessness Scale (Beck, Weissman, Lester, & Traxler, 1974) in three different sessions. The instruments were presented to participants in different orders to help control for the effects of instrument order.

The selection of the BSRI, BDI and HS were based on the decision to remain as consistent as possible with previous studies with respect to the use of measuring instruments.

Bem Sex-role Inventory containing 20 item masculine scale, 20 item femininity scale and 20 item neutral scale was used to obtain scores on two independent dimensions of masculinity and femininity. Participants indicate on a 7 point Likert-type scale how well each of the characteristics described them. The range of possible scores on masculine and feminine scales is from 7 to 140. Although BSRI along with similar inventories have been criticised on account of social desirability differences between BSRI Masculinity (M) and Femininity (F) items (Locksley & Colten, 1979; Pedhazur & Tetenbaum, 1979), it continues to be widely used. The BSRI has been found to be appropriate, to assess individual differences in sex-role orientation (Larsen & Seidman, 1986; Bala, 1980; Bem, 1974).

Beck Depression Inventory is a validated 21 item self report inventory that measures the cognitive, affective, behavioral and somatic components of depression. It has been used extensively in both research and clinical settings. Each item consisting of graded series of four to five self-evaluative statements ranked from 0 to 3 describes a specific behavioral manifestation of depression. The possible range of scores is from 0 to 63 with high score indicating the presence of high depression. Although the BDI is not indicative of full clinical syndrome of depression, it is a reliable and valid measure of depressive symptomatology in clinical as well as nonclinical-samples of adolescents (Upmanyu & Upmanyu, 1994-; Barrera & Garrison, Jones, 1988; Beck, Steer, & Garbin, 1988; Teri, 1982; Reynolds & Gould, 1981).

Hopelessness scale is a self-report measure of view about the future in

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the form of a check list of 20 items to which the participant responds true or false. Out of 20 statements, 9 were keyed false and 11 were keyed true, the possible range of scores being 0 to 20. The validity data presented for the scale are deemed sufficient to justify its use on a continuing basis (Upmanyu & Reen, 1991).

The inventories were scored following the procedures outlined by the original authors.

Analysis

A 2 (male vs. female) x 4 (sex role orientation: androgynous, feminine, masculine, undifferentiated) x 2 (hopelessness: high vs. low) Analysis of Variance (ANOVA) was used. In all ANOVAS, using median as cut off points on both the masculine and feminine scale scores as suggested by Bem (1977) and Spence, Helmreich, & Stapp (1975), male and female participants were classified into four sex-role orientation categories: androgynous (M+, F+), masculine (M+, F-), feminine (M-, F+) and undifferentiated (M-, F-). Within each category of sex-role orientation, participants were further classified into two categories of high and low hopelessness. Depression measures (BDI) were entered into each 2x4x2 ANOVA as a dependent measure.

RESULTS

The mean BDI score for the total American and Indian samples of college students was 6.61 (SD = 7.74) and 12.99 (SD = 6.68) respectively. The two groups were significantly different on depressive tendencies ($p < 0.001$). The mean hopelessness score for the American and Indian samples of college students was 2.58 (SD = 3.25) and 6.05 (SD = 3.11). The mean hopelessness score of the two groups were also significantly different ($p < 0.001$).

Separate 2 (gender), 4 (sex role orientation) x 2 (hopelessness) ANOVAS were performed on the depressive tendencies scores (BDI) from the two American and Indian samples of college students. For American sample, ANOVA demonstrated a clear significant effect for hopelessness, $F(1, 126) = 8.84$, $p < 0.004$. The mean BDI scores of participants higher on hopelessness was markedly higher than the mean of those scoring low on hopelessness (Mean : 9.08 vs. 3.52). There was also a marginally significant effect of sex role orientation, $F(3, 126) = 2.44$, $p < 0.06$. However, the marginally significant effect of sex role

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orientation was qualified by a marginally significant sex-role orientation X hopelessness interaction, $F(3, 126) = 2.42, p < 0.06$. Among participants low on hopelessness, no significant differences were found between the androgynous, masculine, feminine and undifferentiated groups on depressive tendencies; the mean BDI scores of these groups being 3.46, 2.27, 6.10 and 3.00 respectively. However, among participants high on hopelessness, the mean BDI scores of feminine and undifferentiated groups were in the mildly depressed range (Mean : 8.40 vs. 13.32) and the mean scores of androgynous and masculine groups were not in the depressed range (Mean : 6.46 vs. 5.11). Consequently, one would expect feminine and undifferentiated sex-typed persons to show relatively high rates of depression only if they are high on hopelessness. For Indian sample of college students, the three way analysis of variance revealed a significant main effect for hopelessness $F(1, 184) = 18.05, p < 0.001$. Results suggest that the subjects scoring higher on hopelessness were also scoring higher on the BDI than low-scoring subjects. Contrary to the findings with American sample, the analysis revealed a significant main effect for gender, $F(1, 184) = 6.17, p < 0.01$, indicating higher BDI scores for females than males. The gender X hopelessness interaction was also found to be significant, $F(1, 184) = 4.92, p < 0.05$. The analysis showed that high-hopeless female subjects scored higher on the BDI than high hopeless males. Low-hopelessness males and females did not differ on the BDI scores. The effect for sex-role orientation did not reach significance, suggesting no variation on the BDI scores across different sex-types.

DISCUSSION

This study, building on previous investigations, sought to investigate the presence of depressive tendencies as well as its relation to gender, hopelessness-aid sex-role orientation in American and Indian samples of college students. To achieve the objectives of this study, self-report instruments 'measuring each of these variables, were administered together with a measure of depressive symptomatology (BDI).

The results of the present study demonstrated that Indian college students scored significantly higher BDI scores (i.e., show more depressive symptoms) than their American counterparts. Such results are consistent with the results observed by Upmanyu & Upmanyu (1994) with Indian college students. Interestingly, the majority of the participants in American sample of this study reported

low levels of depressive symptoms. If life adjustment is measured only by low levels of depressive symptoms, then most of the American students in this study sample were well adjusted. In contrast, depressive tendencies experienced by the Indian college students were much higher. Although our data on Indian sample do not offer sufficient information about the clinical relevance of the symptoms, the higher BDI scores of Indian sample must be taken seriously because they seem to be more than simple, transient mood fluctuations and current distress. A number of alternative explanations can account for the results. One explanation suggests that the elevations on the BDI scores of Indian sample which comprised mostly of college students belonging to middle socio-economic status were a translation of academic pressure and unrealistic demands from their families as well as society to achieve success for career establishment in the context of hydra-headed unemployment problem.

Another relevant issue relates to the role of gender, sex-role orientation and hopelessness in depressive tendencies. The results differ across the two samples. With regard to gender, contrary to expectation there was no significant gender difference in depressive tendencies reported by American sample. Interestingly, in Indian sample, there was a significant main effect for gender, indicating higher BDI scores for females than males (Mean: 15.38 vs. 10.40). However, gender X hopelessness interaction was also found to be significant, revealing that only high hopeless female participants scored higher on the BDI than high - hopeless males (Mean: 18.98 vs. 12.64). In the low-hopelessness group (56 males, 42 females), the male and female BDI mean scores (Mean = 8.64 vs. 10.41) did not differ significantly. Thus, high hopelessness accounted for gender differences in depression among Indian college students.

Our findings further revealed nonsignificant effect of sex role orientation in Indian sample, revealing thereby no difference between androgynous, masculine, undifferentiated sex-types. However, for American sample there was a marginal significant; effect of sex role orientation, that was, however, qualified by a sex role orientation X hopelessness interaction. This pattern suggests that sex role orientation se may not be relevant to explain variability in depressive tendencies. Instead, hopelessness accounts for the relationship between sex role orientation and depression. Specifically, regardless of gender, we found no differences in depressive tendencies of androgynous, masculine, feminine and

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undifferentiated individuals, low on hopelessness. However, participants with feminine and undifferentiated-sex role identities, but high on hopelessness were significantly more depressed than androgynous and masculine sex role identities. Thus, it would not be adequate to conclude that socialization into the feminine role is detrimental to mental health because it is the high amount of hopelessness that adds significantly to the development of more depressive tendencies in males and females with feminine and undifferentiated sex role identities. It appears that males and females with feminine sex role orientation are more likely to be depressed only if they are high on hopelessness.

The nonsignificant effect of sex-role orientation in Indian sample and the effect of sex-role orientation being qualified by hopelessness in the American sample indicate that Bem's (1974, 1975) contentions described in sex-role theory possibly no longer applies to both male and female college students because of dramatically changing social values and gender roles that place less importance on sex-appropriate gender identity in the present set up than a few decades ago. Instead, males and females are more preoccupied by other serious problems of academic accomplishments, career, shifts in occupational patterns, and future.

The above argument receives support from the fact that in this study hopelessness as a dynamic psychological state emerged as the most salient factor 'underlying depressive tendencies in college students across sex and culture'. The results further indicated that high hopelessness was associated with more pronounced depressive tendencies in both American (Mean : 9.08 vs. 3.52) and Indian (Mean :16.24 vs. 9.4) samples. It is noteworthy that the college students with a low hopelessness score had a lower mean depression score than the published nonclinical normative group mean score. Therefore, high hopelessness may be considered as a legitimate target for therapeutic intervention. However, further research on understanding the basis of hopelessness is a priority for developing effective intervention strategies.

Although generalizability may be limited because the study population was drawn from convenience samples, it has important implications for further exploration of the phenomenon of sex role orientation, hopelessness and depression.

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Effect of Mindfulness on life satisfaction and general well being of young executives.

Jyotsana

Abstract

Modern era is characterized by fastness in all the spheres of life like never before. If on the one hand technological and economic growth are rising on the fast pace then on the other hand health problems, confusions and dissatisfactions in the lives of the people are also on the rise with rapid speed. The modern man's work schedule is characterized by 24x7 to beat the competitive counterparts and to be successful, leaving very less time to devote to one's own self due to which life satisfaction and well being of the people, especially of the youth in the modern age, are on the stake. The present study has been conducted on 120 young executives between the age of 21 to 26 working in private sector whose life satisfaction and well being were low despite of the materialistic success achieved by them. These young executives were trained in mindfulness meditation for a couple of months. The pre and post test design revealed the significant improvement in the life satisfaction and general well being of the participants; hence the significant positive effect of mindfulness has been found.

The effects of the changed life style are clearly evident on the psyche and health of the people now a days. The kind of problems which were never heard of particularly in the lives of the young people have become commonplace - let those be psychological problems or physical ones. The youth today is engrossed in multiple activities beyond stretch to be successful in life particularly material-istically even at the cost of his well being . But soon the risk alarm of ill health and dissatisfaction also start ringing in the lives of so very productive and pro-gressive youngmen and lead them to the collapsing of psychological and physi-cal strength and this may have strong negative bearing on the society in the long run.

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Whatever pursuit for success the man is engaged in will be futile if the satisfaction and well being are not met. Economic and social indicators may be misleading if we consider them to be sufficient indices of happiness and satisfaction. Happiness in the lives of the people comprises of satisfaction and well being. Happiness is a central component of people's conception of good life and good society (Diner, Oishi, & Lucas, 2003).Life satisfaction refers to a person's general happiness, freedom from tension, interest in life etc. The term quality of life (usually measured as satisfaction) indicates general well being. Shin and Johnson (1978) define life satisfaction as a global assessment of a person's quality of life according to his chosen criteria. Andrews and Withey (1974) told about a list of social correlates of well being, self satisfaction including assessment of self, family money, fun, housing, family activities, leisure time and activities, national government consumer services, health and job.

General well being has been defined as the function of physical, psychological and social well being. Life of the individual is directed by the goals set on the physical, psychological and social dimensions. Goals may also determine the extent to which personal resources influence well being. Thus both resources (material and personal) and commitment to goals have an important connection to well being. Diener and Fujita (1995) found that the effect of resources on well being depended on their congruence with personal goals. Ryff and Keys (1995) described six aspects of positive functioning and actualization of potentials as the basis for ' psychological wellbeing ': autonomy, personal growth, self acceptance, life purpose, environmental mastery, and positive relations with others. They opine that it is the presence of these strengths and realized potentials that define well being and fully functioning person.

It is quite important for the realization of potentials and strengths that some time be given for practicing some kind of meditation technique so that to increase life satisfaction and well being. Though there are many techniques of meditation yet for well being and life satisfaction enhancement a quite different approach has grown out in the meeting of Eastern philosophy and Western psychology. Eastern meditative practices, like of Buddhist tradition have a long past in their own right but a short history in psychology. In West the concept and practice of meditative technique of mindfulness has made its way into empirical psychology, perhaps most notably beginning with the work of Ellen Langer (Langer,1989,2002; Langer & Moldoveanu, 2000). Mindfulness is a present centered technique in which attention is focused on the here and now of our experience. That is, seeing clearly what is actually going on in our lives when our perception is uncluttered by wishes, desires and needs. Mindfulness meditation is a means of increasing the clarity of perception by observing and learning about the self. Meditation is aimed at increasing the accuracy of our self under-

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standing and providing a basis for self improvement and enhanced quality of life. Mindfulness meditation has been most extensively investigated as a therapeutic practice for people dealing with a variety of mental and physical disorders, particularly those caused by high level of stress. The value of mindfulness meditation has been established in many research findings in improving the lives of the people coping with diverse problems (Shapiro, Schwartz, & Santerre, 2002; Walsh & Shapiro, 2006). The assessment of effects of mindfulness on well being in non-clinical settings and populations is a recent development in psychology (Brown & Ryan, 2003, 2004; Wallace, 2005, 2006; Walsh & Shapiro, 2006). Mindfulness is an important vehicle for self change and improved well being.

Objectives:

1. To study the effect of mindfulness meditation on life satisfaction of young executives.
2. To study the effect of mindfulness meditation on general well being of young executives.
3. To study the relationship between life satisfaction and general well being in young executives.

Hypotheses:

1. Mindfulness meditation will have significant effect on life satisfaction of young executives.
2. Mindfulness meditation will have significant effect on general well being of young executives.
3. There will be significant relationship between life satisfaction and general well being .

Method:

Sample:

To conduct the study 315 young executives of age ranging between 21 to 26 yrs working in reputed private sector companies were randomly selected. The sample was homogeneous from the socio-economic and educational point of view. Out of this 118 executives volunteered to attend the sessions of mindfulness meditation.

Tools:

1. Life satisfaction scale (Alam & Srivastava, 1983).
2. General well being scale (Verma & Verma. 1989).

Statistical Analysis:

1. t-test
2. Pearson product moment method of correlation.

Procedure:

To conduct the study 315 executives working in reputed private sector companies were taken. The Life satisfaction scale and General well being scales were administered on them. Out o this sample 262 executives were found to have less life satisfaction and lower level of general well being. Only 118 execu-tives volunteered to participate in the meditation session of mindfulness for four days in a week. The session continued for two months and each session was for 30 minutes. After the completion of two months the retesting was done of life satisfaction and general well being of the 118 participants and further statistical analysis was done of the obtained scores .

Results & Discussion :

The obtained results are given in the following table.

Table- I :

“Significance of diffrence between means on Life Satisfaction in young executive”

	Mean	SD	t	Level of significance
Pre- test	39.99	8.11	3.64	.01
Post- test	47.83	7.54		

The obtained results in Table-I depict the significant difference in the level of life satisfaction in young executives after following the practice of mindfulness meditation. The life satisfaction is increased as revealed by the post meditation test results. Thus it can be concluded that mindfulness meditation is effective in improving the level of life satisfaction. The significant positive effect of mindfulness meditation on life satisfaction proves the hypothesis no.1.

Table-II :

“Significance of difference between means on General well being of young executives”

	Mean	SD	t	Level of significance
Pre-test	14.97	4.09	7.09	.01
Post-test	15.71	2.13		

The results in Table-II show the significant difference in general well being at .01 level. The general well being was less (14.97) in pre-testing phase of the executives and after following the schedule of mindfulness meditation the general well being has significantly improved (M=15.71). Thus hypothesis no. 2 is proven as there is significant positive effect of mindfulness meditation on general well being of the executives. Earlier studies have also shown the positive effect of mindfulness meditation on well being (Brown & Ryan, 2003, 2004; Wallace, 2005,2006; Wallace & Shapiro, 2006; Walsh & Shapiro, 2006). At a more general level , Brown & Ryan (2003) note that the potential value of mindfulness for improving well being is suggested by substantial research on the importance of attention in the self regulation of behaviour. Mindfulness may contribute to more self determined and autonomous actions and personal goals that are freely chosen which are likely to be personally expressive and therefore more satisfying than goals imposed by circumstances or others.

Further a positive relationship ($r = .74$) has been found between the life satisfaction and general well being which is significant at .01 level, thus hypothesis no. 3 is also supported. Ed Diener (2000) also studied happiness, defined as subjective well being measure of which assesses a person's level of life satisfaction.

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SUICIDE IDEATION IN RELATION TO DEPRESSION AND HOPE- LESSNESS AMONG ADOLESCENTS

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Suicide is an act of intentionally ending one's own life. Suicide behavior is as old as human race but it is only in the last few decades attempts have been made to understand the variables related to suicide ideation. In the current study an attempt has been made to examine the relationship of suicide ideation with depression and hopelessness among male and female adolescents. 100 male and 100 female adolescents in the age range of 15 to 17 years were administered different measures related to suicide ideation, depression and hopelessness. The study revealed higher prevalence of suicide ideation among male adolescents. It was also found that suicide ideation correlated significantly with depression. However, the correlation turned out to be non-significant when the role of hopelessness was partialled out. The findings regarding the role of hopelessness was identical for both male and female adolescents, suggesting thereby that hopelessness mediated the relationship of suicide ideation with depression.

Suicide (Latin *sui caedere*, to kill oneself) is the act of intentionally terminating one's own life. Suicide occurs for a number of reasons such as depression, substance abuse, shame, avoiding pain, financial difficulties or other undesirable situations (Meltzer & Howard, 2000). In recent years suicide has emerged as an important public health problem in many countries (Krug et al 2002). Internationally, approximately one million people die by suicide each year (WHO 1999). The wish to die and thoughts of killing oneself. The wish to die and thoughts of killing oneself (suicidal ideation) are a frequent phenomenon among the youth of today. Suicidal ideation is the first link or lowest level of suicidal behavior. Suicide is the third leading cause of death among adolescents in the United (Anderson, 2002).

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Suicide Ideation, suicide Attempt and Suicide Completion are a major public health problem among adolescents and young adults worldwide (Crosby, et. al., 1999). Suicide ideation and suicide attempt are associated with subjective distress, social and occupational impairment, and increased rates of mental disorders (King, et. al., 2001, and Wichstrom, et. al. 2000. Previous suicide ideation and behavior is the strongest predictor of suicide completion (Pfeffer, et. al., 2000, and Fergusson, et. al., 2000). Suicide is a problem that affects people of all ages and economic levels, and is recognized by the WHO as a significant public health problem.

In the historical perspective, it can be seen that probably there has been no human society or period in recorded history in which the phenomenon of 'suicidal behavior' was nonexistent (Latha, Bhat, & D'Souza, 1996, p.26). There is substantial evidence of the disturbing nature and extent of suicidal behavior as an epidemiological problem. Much has been written on this subject. Suicides are numerous in Shakespeare's plays and in the entire romantic theatre. Suicide has a place in ethics, history, literature and art. Physicians, jurists and theologians are concerned about it. It continues to provoke curiosity, to awaken sentiments of pity and terror and to offer rich, paradoxical material for discussion.

The rising incidence of attempted and completed suicide in the last two decades, often referred to as "epidemic" is documented in many countries. Studies from various countries in the Western world coincide in estimating the prevalence of adolescent suicide attempts to be fairly high, ranging from 3% to 11% (Brent, 1995; Lewinsohn et al.1994). Previous suicide attempt is a marked risk factor for completed suicide among adolescents. Increase in adolescent suicides, during the recent decades, makes researches for the risks and protective factors for adolescent suicidal behaviour an important task. If a teen's sense of personal identity is not yet fully integrated, which may be the case for most, given their stage of biological development, these various changes occurring in adolescence may lead to identity crises and perhaps to pondering self-annihilation.

Though suicide is ancient, undoubtedly as ancient as humanity, its study did not advance much before the middle of the nineteenth century, when the psy-

chopathology of the individual became an active field of research. Research on suicide attempts in the recent past revealed that the phenomenon has now assumed the proportions of a major health problem. The burden on the medical services of caring for suicide attempters is of growing concern to medical and mental health professionals.

Realizing the gravity of the phenomenon of suicidal behaviour there is an ongoing debate concerning the rationality of feelings of wanting to die, assisted suicide and euthanasia. The phenomenon has been attracting the attention of a wide variety of medical and social disciplines including philosophy, theology, history, psychology, sociology, psychiatry and criminology (Shukla, Verma, & Mishra, 1990, Venkoba Rao, 1977). It continues to provoke curiosity, to awaken sentiments of pity and terror and to offer rich paradoxical material for discussion.

The growing rate of suicide among certain subgroups challenges our supposed love for life and fear for death. This perplexing question "Why do human beings and particularly college / university students commit suicide? And increasing recognition of suicide as a major health problem has led to a number of attempts to identify the social and psychological characteristics of people attempting suicide. Psychologists in particular are increasingly concerned with the detection of suicide risk factors. Despite effort and theory, which began long before Freud and Durkheim, the most pressing* question of society remains unanswered adequately. There is still no adequate explanation for this, though the increasing availability of drugs, particularly psychotropic is implicated.

Numerous studies have revealed that hopelessness is a strong, independent correlate of suicide behavior in clinical and epidemiologic studies (Goldston, et. al. 2001, and Kaltiala-Heino, et. al., 1999). As a result of these findings, the construct of hopelessness is frequently included in studies investigating the predictors of suicidal ideation and behavior. Despite the strong and consistently observed relationship between hopelessness and suicidality, no other single cognitive risk factor has received substantial attention in population-based studies of suicide risk.

HYPOTHESES:

On the basis of review of literature presented in the preceding paragraphs, the current study starts with the following hypotheses:

1. There is a significant correlation of Suicide Ideation with Depression for both male and female adolescents.
2. It is assumed that there will be a significant correlation of Suicide Ideation and Hopelessness among both male and female adolescents.
3. It is expected that Hopelessness will moderate the relationship of sui-cide ideation with depression.

METHODOLOGY

SAMPLE

The sample comprising of 1500 (750 males, 750 females) adoles-cents in the age range of 17-20 years was selected from different Government and Private Colleges of City beautiful, Chandigarh.

The following variables were taken into consideration for the purpose of select-ing sample;

- 1 The sample was non-clinical in the sense that subjects were not receiving psychiatric treatment.
- 2 There was no evidence of drug addiction or alcoholism.
- 3 All the subjects were regular students of different colleges.
- 4 The subjects belonged to intact families.

TESTS

The following tests were used:

1. Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961).
2. Hopelessness Scale (Beck, Weissman, Lester, & Trexler, 1974);
3. Suicide Ideation Scale (Beck, Kovacs, & Weissman, 1979)

RESULTS:

The obtained results of the present investigation are presented in the following tables:

Table:1 Correlation of suicide ideation with depression and Hopelessness for Female adolescents:

Sr. No.	Variables	Suicide ideation	Depression	Hopelessness
1	Suicide ideation.	-----	.46	.58
2	Depression	.46	-----	.40
3	Hopelessness	.58	.40	-----

Table:2 Correlation of suicide ideation with depression and Hopelessness for Male adolescents:

Sr. No.	Variables	Suicide ideation	Depression	Hopelessness
1	Suicide ideation.	-----	.56	.66
2	Depression	.56	-----	.42
3	Hopelessness	.66	.42	-----

Table 3: Partial correlation of Suicide Ideation with Depression after partial-ling out the role of Hopelessness

Partial Correlation	Male	Female
r 1 2. 3	.28	.22

DISCUSSION:

The aim of the current study was to investigate the relationship of suicide ideation with depression and hopelessness separately for male and female adolescents. This was done by computing Pearson Product Moment Correlation of suicide ideation with depression and hopelessness. Suicide ideation correlated significantly with depression ($r = .5, < p.01$) and hopelessness ($r = .66, p < .01$) for male adolescents. Likewise suicide ideation correlated depression ($r = .46, p < .01$) and hopelessness ($r = .58, p < .01$) for female adolescents. The study further revealed that the correlation of suicide ideation with depression markedly reduced when the influence of hopelessness was partialled out. The partial correlations of suicide ideation with depression were found to be .28 and .22 for male and female adolescents respectively.

The partial correlation implied that depression in itself is not a correlate of suicide ideation. The correlation between these two variables depends upon the mediating role of hopelessness which is a key component of depression. In other words the variance attributable to suicide ideation clearly depends upon the moderating role of hopelessness. Thus in any therapeutic program the target of intervention is more of hopelessness rather than depression in isolation. These findings clearly corroborate the earlier researches which have also found the moderating role of hopelessness in the relationship of suicide ideation with depression. Further, although qualitative differences in suicide ideation were found between male and female adolescents with male scoring high on suicide ideation then female adolescents. The qualitative difference could not be assumed on the basis of variable under investigation.

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A study of Burnout, Self- Efficacy and Sex roles among Womenn lecturers.

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Abstract

In the present scenario the working women are facing different kinds of problems like stress and burnout at work place as well as at home. They have their multiple roles to play. Burnout is a state of physical, emotional, and mental exhaustion caused by long term exposure to demanding work situations. Sex role and self efficacy are also contributing in increasing the burnout. Keeping all these views in mind the present study was conducted on 150 women lecturers in Haryana state. The results depicted that positive correlation was found between self efficacy and personal accomplishment. A significant negative correlation was explored between self efficacy and emotional exhaustion in women lecturers.

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Burnout, Self- Efficacy

It is an open truth that working women have to face problems just by virtue of their being women. The social attitude considers women fit for certain jobs and not others. Thus women find employment easily as nurses, doctors, teachers the caring and nurturing sectors, secretaries or in assembling jobs-the routine submissive sectors. But even if well qualified women engineers or managers or geologists are available, preference will be given to a male of equal qualification. Women has to almost always shoulder the burden of household chores besides working outside from home as well. A woman could still bear up with these problems if she had control over the money she earns. But in most families even now her salary is handed over to father, husband or in-laws. So the basic motive for seeking employment of getting independence is nullified in many women's case. Sex roles and lack of self efficacy due to the maltreatment at work and home leads to the burnout among women. Problems of gender bias beset women in the working sector. The psychological pressure of all this can easily lead to a woman quitting her job. Most of the problems that beset working women are in reality rooted in the social perspective of the position of women. Traditionally men are seen as the bread winner and women as the house-keepers, child bearers and rearers. This typecast role model continues to put obstacles before the working women. A fundamental change is required in the attitudes of the employers, policy makers, family members and other relatives and the public at large.

Burnout is a state of physical, emotional, and mental exhaustion caused by long term exposure to demanding work situations. Burnout is a chronic affective state comprised of emotional exhaustion, physical fatigue, and cognitive weariness (Shirom, 1989, 2003). Burnout is defined as a negative psychological experience that is the reaction to job-related stress (Deutsch, 1984; Ratlif, 1988). Burnout happens when people who have previously been highly committed to a job lose all interest and mo-

tivation. (Maslach, 1993), burnout is described as “ a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who work with other people in some capacity. Burnout in an individual is inferred to result from job strains, which may lead to maladaptive coping responses and poor work performance (Tang & Yeung, 1999). Burnout is not simply excessive stress. Rather, it is a complex human reaction to ongoing stress, and it relates to feeling that your inner resources are inadequate for managing the tasks and situations presented to you. Burnout includes an emotional exhaustion and an increasingly negative attitude toward your work, perhaps, the life. It is the exhaustion of physical or emotional strength or motivation usually as a result of prolonged stress or frustration. Emotional exhaustion as being caused by high emotional demands (emotional labour) necessitated by a particular job. Prior work has argued that emotional demands are in fact the most likely to cause stress (Zapf et al., 1999), and such demands have together been labelled emotional labour (Ashforth and Humphrey 1993). Emotional labour refers to the necessity of service operatives to display certain emotions that are seen as appropriate to that role.

When the individual is stressed, he cares too much, but when he is burned out, he doesn't see any hope of improvement. It results when individuals experience increasing amount of negative stress. Tracy (2000) describes this as “a general wearing out or alienation from the pressures of work”. One potential result of an extended exposure to a single or to multiple stressors is burnout, defined by Maslach, Schaufeli, and Leiter (2001) to include exhaustion, feelings of cynicism and detachment, a sense of ineffectiveness, and lack of accomplishment. High stress jobs can lead to more burnout than normal ones. Maslach, Schaufeli, and Leiter (2001) noted that individuals with high MBI scores tend to also exhibit higher levels of job dissatisfaction and lower workplace effectiveness. Work by Lee and Ashforth (1990) supports the argu-

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ment that high and consistent exposure to stress can lead to burnout. Cropanzano, Rapp, and Bryne (2003) find that long-term exposure to high levels of stressors can lead to emotional exhaustion, which has been shown to degrade organizational commitment and increase turnover intentions. Teacher burnout is a condition caused by depersonalization, exhaustion and a diminished sense of accomplishment (Schwab et al. 1986). While “work appears as a major source of stress for working people, teachers appear to experience more stress through work than non-teachers” (Cox and Brockley 1984). In-depth studies have established a clear linkage between prolonged stress and burnout (Blasé 1986). Numerous studies of American teachers, particularly those in urban schools, have documented the high level of stress and burnout among teachers (Cunningham 1983). Burned out teachers are not effective in the classroom because “burn-outs who remain use significantly less task oriented behavior (i.e. less hands-on, active learning), and provide fewer positive reinforcements to their students (Koon, 1971). The research supports the contention that stress affects teachers’ effectiveness with students (Blase 1982). The most influential description of burnout is the operational definition by Maslach & Jackson (1986), describing burnout as a syndrome with three components, emotional exhaustion, depersonalization and reduced personal accomplishment. Burnout is defined as a process, starting with emotional exhaustion, then leading into feelings of depersonalization and later the feeling of reduced personal accomplishment. Freudenberger suggested that a person attempting to achieve unrealistic expectations, whether imposed socially or internally, may become exhausted both physically and mentally (Miller, 1995). At about the same time, Maslach was studying the ways in which people coped with emotional arousal on the job (Maslach & Schaufeli, 1993).

Maslach and colleagues originally defined burnout as a syndrome of physical and emotional exhaustion, involving the development of a negative self-con-

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cept, negative job attitudes, and loss of concern and positive feeling toward clients (Maslach, 1976). This definition was later modified to distinguish the three dimensions of the burnout syndrome (Maslach & Jackson, 1981a). Freudenberger defines burnout, "to fail, wear out, or become exhausted by making excessive demands on energy, strengths or resources." (Söderfeldt, 1997,). Freudenberger and Richelson, defines burnout "a state of fatigue or frustration, brought about by devotion to a cause, way of life or relationship that failed to produce the expected reward." (Söderfeldt, 1997).

Soares and Sundin (2007) revealed that 21% of the women had high burnout, and compared to those with low burnout, they were more often younger, divorced, blue-collar workers, lower educated, foreigners, on unemployment/retirement/sick-leave, financially strained, used more medication and cigarettes, reported higher work demands and lower control/social support at work, more somatic problems (e.g. pain) and depression. Women with high burnout were apparently faring poorly financially, emotionally and physically.

Self-efficacy is a person's belief in his or her ability to succeed in a particular situation. A self-efficacy belief in human functioning is that "people's level of motivation, affective states, and actions are based more on what they believe than on what is objectively true" (Bandura, 1997). Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave. Such beliefs produce these diverse effects through four major processes. They include cognitive, motivational, affective and selection processes. Self-efficacy relates to a person's perception of their ability to reach a goal. People generally avoid tasks where their self-efficacy is low, but will engage in tasks where their self-efficacy is high. People with high self-efficacy in a task are more likely to expend more effort, and persist longer, than those with low

Burnout, Self- Efficacy

efficacy. Self-efficacy has been defined in a variety of ways: as the belief that one is capable of performing in a certain manner to attain certain goals (Ormrod, 2006). It is a belief that one has the capabilities to execute the courses of actions required to manage prospective situations. It has been described in other ways as the concept has evolved in the literature and in society: as the sense of belief that one's actions have an effect on the environment (Steinberg, L. (1998)., as a person's judgment of his or her capabilities based on mastery criteria; a sense of a person's competence within a specific framework, focus-ing on the person's assessment of their abilities to perform specific tasks in relation to goals and standards rather than in comparison with others' capabilities.

A gender role is defined as a set of perceived behavioral norms associated particularly with males or females, in a given social group or system. Gender is one component of the gender/sex system, which refers to "The set of arrangements by which a society transforms biological sexuality into products of human activity, and in which these transformed needs are satisfied" (Reiter, 1975). A gender role is a theoretical construct in the social sciences and humanities that refers to a set of social and behavioral norms that, within a specific culture, are widely considered to be socially appropriate for individuals of a specific gender. Gender here refers to an individual's inner sex or psychological sense of being a male or female irrespective of one's (outer) sex identity as determined by one's sexual organs. There are two main genders: masculine (male) or feminine (female). Gender roles refer to the set of attitudes and behaviors socially expected from the members of a particular gender identity. Gender roles, unlike natural human genders, are socially constructed. They may reflect natural gender aspirations of the members of that gender identity, or they may be politicized and manipulated, which then result in the oppression of people. A

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person's gender role is composed of several elements and can be expressed through clothing, behavior, choice of work, personal relationships and other factors.

Objectives:

1. To find out significant correlation between Burnout and sex roles among women lecturers.
2. To find out significant correlation between Self efficacy and burnout among women lecturers.

Method:

Sample:

The present study is conducted on a sample of 150 women lecturers. The sample was comprised on females having age range from 23 to 53. The sample was collected from many colleges and universities in Haryana State.

Tools used:

1. Maslach Burnout Inventory (Maslach et al., 1996). A set of 19 items from the latest version of the Maslach Burnout Inventory Form ES (MBI) (Maslach et al., 1996) which has been developed especially for educational institutions was used to provide a self-assessment of each teacher's perceived burnout level. The original 22-item MBI has three factor-analytically derived scales: emotional exhaustion, depersonalisation and personal accomplishment. Whereas emotional exhaustion and depersonalisation are positively related to burnout, personal accomplishment is negatively related to burnout. A five-point Likert response format ranging from Almost Never to Almost Always was used to score each item.

2. Bem Sex Roles Inventory (Bem, 1974). The BSRI was developed by Sandra Bem in 1974 to measure masculine, feminine and androgynous personality traits among men and women. The Bem Sex Role Inventory (BSRI) provides independent assessments of masculinity and femininity in terms of the

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respondent's self-reported possession of socially desirable, stereotypically masculine and feminine personality characteristics. This can also be seen as a measurement of the extent to which respondents spontaneously sort self-relevant information into distinct masculine and feminine categories. The self-administering 60-item questionnaire measures masculinity, femininity, androgyny, and undifferentiated, using the Masculinity and Femininity scales. A total of sixty questions—twenty regarding masculine characteristics, twenty feminine, and twenty neutral. Participants rate each item on a 7-point scale on how true each of these characteristics is for them. The manual published in 1978 with some updated information on the BSRI reported internal consistencies between .75 and .90. Test retest reliabilities for the Femininity and Masculinity scales for the original BSRI were .82 and .94 respectively among females and .89 and .76 among males.

3. Self Efficacy Scale, (Schwarzer, 1981). The scale contains 10 items and is a four-point scale. The scale was created to assess a general sense of perceived self-efficacy with the aim in mind to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events. The scale is designed for the general adult population, including adolescents not below the age of 12. Reliability coefficient ranged from .76 to .90. Criterion-related validity is documented in numerous correlation studies where positive coefficients were found with favorable emotions, dispositional optimism, and work satisfaction. Negative coefficients were found with depression, anxiety, stress, burnout, and health complaints.

Procedure:

The participants were taken from different colleges and universities. Before administering the test rapport was established. Instructions were made clear

to all the subjects. Questionnaires were administered individually as well as in groups as per the conveniences of participants.

Results and Discussion:

The present research paper is aimed to investigate the relationship of burnout, self efficacy and sex roles among the working women lecturers. Like most human services professionals, teachers are prone to experience burnout due to their intense, everyday interaction with students, colleagues, administration and parents (Friedman, 2006; Schaufeli and Enzmann, 1998). This result is in line with (Friedman, 2006; Lee and Ashforth, 1996). They explained that teacher efficacy is a key component in the burnout process. The present results explored that female faculty members have higher mean scores on emotional exhaustion. This has been supported (Lackritz, 2004) that female faculty members have higher mean scores on emotional exhaustion.

A significant positive correlation was found between Self Efficacy and Personal Accomplishment. This result represented that women lecturers have higher Self Efficacy that increases the sense of Personal Accomplishment. This is in line with the results of (Betoret, 2006; Evers, Brouwers, and Tomic, 2002). They explained that teachers with high beliefs in their teaching ability (i.e. teacher efficacy) have demonstrated less burnout than teachers with low levels of efficacy. A high level of perception of self-efficacy enhances effective stress management and coping with professional duties; it also facilitates changes in the working environment and prevention of the burnout causes (Warszawa 2000). Maria Brudnik, 2009, suggested that a high level of general self-efficacy most effectively prevents the loss of sense of personal accomplishment in the teachers.

Further results indicated that there is significant negative correlation be-

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tween Self Efficacy and Emotional Exhaustion among female lecturers. This result shows that the participants who have higher Self Efficacy have lesser feeling of burn-out. Individuals with a stronger sense of perceived self-efficacy experience low stress in threatening or taxing situations, and experience situations as less stressful owing to their belief in their ability to cope (Bandura, 1997). Exposure to chronic occupational stressors, with low sense of efficacy to manage job demands and to enlist social support in times of difficulty, increases vulnerability to burnout (Leiter, 1992; Schmitz, 2000). Teachers' perceived lack of support from colleagues and principals had a significant effect on their self-efficacy beliefs in eliciting support from them, while these self-efficacy beliefs were shown to predict their level of burnout. (André Brouwers, 2001).

A significant positive correlation was found between Emotional Exhaustion and Masculinity. This result shows that participants having more characteristics of males have more feeling of emotional exhaustion on their work.

Table of correlation

	Mean	SD	Depersona lization	Personal Accompli shment	Emotional Exhaustion	Masculi nity	femin ity	Self Efficacy
Depersonalization	4.64	5.08	1.00	-.103	.526**	.107	.015	-.012
Personal Accomplishment	39.32	6.42		1.00	-.223**	.016	.024	.259**
Emotional Exhaustion	16.70	9.29			1.00	.164*	.034	-.162*
Masculinity	96.18	19.54				1.00	-.003	.131
Femininity	102.14	17.16					1.00	.064
Self Efficacy	30.17	4.89						1.00

Conclusion:

This paper is to investigate the relationship of burnout, self efficacy and sex roles among the working lecturers. Results indicated that participants having higher Self Efficacy have more sense of Personal Accomplishment. Further results indicated that there is significant negative correlation between Self Efficacy and Emotional Exhaustion which is a sub dimension of Burnout. This result shows that participants having higher Self Efficacy have less feeling of burnout. There exists a significant positive correlation between Emotional Exhaustion and Masculinity. This result shows that participants having more characteristics of males, have more feeling of emotionally exhausted by their work.

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Global Adjustment of General Government Employees and Police Personnel

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ABSTRACT:

The present study investigated the Global Adjustment of General Government employees and the Police Personnel of Northern India. The sample comprised of 105 (54 general govt. employees & 51 police personnel); ranging from 35 years to 52 years. The Global Adjustment Scale developed by Psy-com services, New Delhi was used in group form for collecting data. The mean scores of the study revealed that general govt. employees showed better adjustment on family, health, and sex dimensions while on emotions, occupation and social dimensions the police personnel leads their counterparts. The t-values were significant at 0.01 levels on emotion, health and occupational dimensions while the rests were insignificant.

The term "adjustment" refers to the adequacy of the personal and interpersonal processes that we use to adapt to our environment. There is no way to define a good or a poor adjustment without the use of certain basis that we and others have for what represents appropriate behaviors. A well adjusted person is someone who engages in behaviors that are appropriate for the culture and a given interpersonal situation. Well-adjusted behaviors, according to this view, also are flexible and subject to changes in the environment, produce no harmful effects on the individual or other people, and do not lead to internal hang-ups or short and long term interaction problems. Individuals who deviate from this definition are seen as having adjustment problems.

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Global Adjustment

Adjustment is a static equilibrium between an organism and its physical and social surroundings in which there is no stimulus change evoking a response. Further, where no need is unsatisfied and all the continuative functions of the organism are proceeding normally. However, such a complete adjustment is never attained; it is a theoretical end of a continuum of degrees of partial adjustment. Psychologically, the term adjustment refers to a person's ability to function normally in everyday life.

The term adjustment has been described in many ways by different psychologists, biologists, mental hygienists and other behavioral scientists. Generally it has been argued that the concept of adjustment is a mere fiction, as people have always failed in giving a standard definition of adjustment, partly because of its many meanings, and partly because the criteria against which adjustment could be evaluated are not well defined; further the boundaries between adjustment and maladjustment are never water-tight. In simple term adjustment refers the extent to which it is intended. Hence, adjustment is taken to be a process and not as a condition (Symonds, 1946; Madigen, 1962; Coleman, 1960).

During the process of adjustment, an individual is confronted with factors i.e. environmental demands, and needs and motives to be satisfied. There is always a conflict between these two forces which call forth adjustive process. And that behavior has been considered adjustive behavior which makes a comprise between these two forces and help the individual achieving harmonious, stable, and satisfying relationship with his environment. Madigen (1962) says "if the conflicts are solved to satisfy the individuals' needs within the tenets approved by the society, the individual is considered adjusted".

Adjustment has been studied in relation to anxiety (Khan' 1989); anxiety and conflict (Verma & Upadhayaya, 1983); cognitive differentiation, sex variance and rural-urban environment (Shamshad & Sulaiman, 1994), effect of intelligence on adjustment (Shamshad, 1996). Martin and associates (2005) conducted a study on the role of psychological climate in facilitating employee's adjustment during organizational change. Saathoff & Buckman (1990) evaluated police officers which revealed that the most common primary diagnosis was adjustment disorder followed by substance abuse and personality disorder. Adjustment has been studied in relation to anxiety, work alienation, ego strength, social deprivation, creativity, motives, intelligence, depression, marital discord etc. but not directly in relation to need deficiency of police personnel (Alam, 2007). Brown (2006) conducted a research study and the result suggested no correlation between leaders' use of emotional intelligence and the motivational

Therefore, in a more practical sense, adjustment is a condition of harmonious relationship between the social and the physical environment wherein a person is able to obtain optimum satisfaction for most of his needs and to meet fairly well the physical and the social demands imposed upon him. Hence, adjustment is a process of making the changes needed or desired, in oneself and/or in one's social and physical environment to experience what is termed as feeling of ad-justment.

The concept of adjustment refers to active and creative efforts to live effectively and satisfactorily. Following five aspects of adjustment are of special impor-tance:

1. Effective living requires gaining skills through interaction with one's world.
2. Effective living requires a degree of control over one's daily life as adjust-ment also depends on the ability of an individual to make life decisions and choices.
3. Effective living also requires redefining difficult situations in order to suc-cessfully meet the challenges of life.
4. Effective living requires self-understanding, as it allows one to determine which life choices are most likely to result in personal growth. Accurate assessment of personal characteristics enables one to form realistic as-pirations.
5. Effective living requires the ability to make accurate judgments about the people and places in one's life.

Thus, adjustment is viewed in relation to the growth and adaptation that is made to specific life contexts.

The police personnel suffer from worries, irritability, disturbed interpersonal, intra-personal relationship, worries over home, health and so on. Hence, mental illness is not confined to people admitted in hospitals, mental asylums; it also reaches to home, society and it can be found at the work place. Thus, it is common concern for the behavioral scientists in general that the problem of adjustment is of immense importance for all of us and there is general feeling that police personnel must be helped in developing good home, health, social and emotional adjustment. Lehner and Kube (1955) have rightly pointed out that "we would not expect to cross the desert in a boat or the ocean in an automo-bile". The police personnel who are exposed to violent situations are sometimes assaulted by suspects may be less likely to enjoy their jobs.

METHODOLOGY

SAMPLE

The sample consisted of 165 (85 general govt. employees & 80 police person-nel) subjects (all male) from the northern states of India including Delhi, Haryana, Himachal Pradesh, Panjab, Rajasthan and UT-Chandigarh) of Superintendent to administrative officer level general government employees and Sub-inspector to Deputy Superintendent level police personnel. Their educational qualifications were from graduation to post graduation and the age range was from 35-52 years. Stratified random sampling technique was applied. The final sample con-sisted of 105 (54 general govt. employees & 51 police personnel) subjects.

TOOL

The Global Adjustment Scale (GAS) – Adult Form was used to collect the data. This scale is designed and developed by Psy-com services, New Delhi consist-ing 120 items studying the adjustment of the subject on six dimensions i.e. Fam-ily, Health, Social, Emotions, Occupation and Sex. This scale seeks to obtain information about how well the individual understands and has learned to live with his feelings and emotions in his physical and social environment. The test-retest reliability is Em-0.70, Fa–0.58, He- 0.65, Oc-0.61, Se-0.72, So-0.65.

PROCEDURE

While administering the tool to the subjects a general procedure was followed. Preliminary introduction was given to the subjects regarding the relevance and purpose of the study. After establishing rapport and assuring the attention and co-operation of the subjects the tool was administered. The tool was adminis-tered in a group form so, the answer-sheet were slipped inside each test booklet before distribution and the subjects called upon to fill in names, age, sex, class etc. on the answer-sheet. Then, after distributing the booklets, the investigator instructed the subjects to read the instruction given on the front page of the booklet silently, along with the instructor who read it aloud.

The investigator sat besides the subjects and cleared all the doubts raised by the respondents while filing/recording their answers on response sheet. The test

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was taken back after the subjects completed it. Same procedure was applied for all the subjects.

After collecting data, the responses of subjects were scored with the help of scoring stencils and manual.

RESULTS AND DISCUSSION

Table 1: Mean, SD and t-values of general government employees and police personnel on global adjustment scale

Areas of Adjustment	General Government Employees		Police Personnel		t-value
	Mean	SD	Mean	SD	
Emotion	11.16	6.68	14.13	6.93	2.35
Family	14.53	4.25	10.7	6.18	11.61 ^{***}
Health	13.33	4.07	9.23	4.35	3.70 ^{***}
Occupation	17.53	3.33	13	4.38	4.63 ^{***}
Sex	9.6	5.03	9.03	6.18	0.38
Social	12.3	7.24	14.4	8.15	1.03

^{***} p<.01

The results of the present study throw light on the global adjustment of general government employees and police personnel. The study was planned to ascertain a comparison between the two groups of employees and it was found that the general government employees have better adjustment on family, health, occupation and sexual dimensions of adjustment.

Results indicate that a significant difference exists on family, health and occupational dimensions of global adjustment scale.

The result table indicate that the mean value of general government employees on emotional dimension was 11.16 and SD = 6.68 than of police personnel where the mean value was 14.13 and SD = 6.93 was higher than the general government employees. The t-value on this area of adjustment was not found significant. Emotional adjustment usually found to get disturbed if the feelings and experience of lack of desire fulfillment. If the needs are adequately satisfied or fulfilled then emotional adjustment is high. The police personnel have the feeling of socially adjusted, as per the results of the study, and thus have an opportunity to interact in various social activities. The roles, functions, and nature of duties of police personnel are different than general government employees. Even then they get an opportunity to share in their family functions and sorted out the avenues for the fulfillment of this area of emotional adjustment.

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The result table indicate that the mean value for general government employees on family is 14.53 which is higher than the mean value of police personnel i.e. 10.7 and the t-value was found significant at 0.01 level with a $df = 58$. It indicates that general government employees spend more time in family activities in comparison to police personnel. As the police personnel are unable to pay full attention to their family. In most of the cases they spent longer period away from family as they have transferable jobs, and other daily assignments. Sometimes they humiliated by their seniors or higher officials. They are always being criticized by public too. But in spite of all these old conditions they try to adjust themselves because of some other tangible and intangible.

Results of table on health adjustment of general government employees were found better than the police personnel. The general government employees mean score was 13.33 and $SD = 4.07$ while the police personnel's mean value was 9.23 and $SD = 4.35$. The SE_D was 1.107 and the t-value of health adjustment was 3.70 with $df = 58$, the value is significant at 0.01 level. It depicts that the general government employees have better health adjustment than their police personnel counterparts.

In view of the above finding it is clear that health adjustment of police personnel is on the lower side. They have the feeling that they did not get ample opportunities to participate in goal settings, less importance to independent thinking, and least facilities to solve their health related problems. It is also a reality that the police personnel do not have set working hours. They always ready for duties and that is why the police personnel experience in the problem of health adjustment. On the other hand, the general government employees have set working hours; have fixed holidays and sufficient time to look after their health.

The mean value of occupational dimension of general government employees was found 17.53 greater than the police personnel where the mean was 13. The SD of general government employees was 3.33 and for police personnel it was 4.38. The SE_D was 0.977 and the t-value of occupational adjustment was 4.63 with $df = 58$, the value of t was significant at 0.01 level. It indicates that total occupational adjustment was better than that of police personnel. It is a matter of fact that home and occupation can't be separated. When people reach their work place they carry on with them to home events which have their reflection in their professional tasks or responsibilities, the same way when people come back to their home they carry on their work related issues and problems to their home, hence both are highly correlated. It is also interesting to mention the fact

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that what privileges are enjoyed or taken granted by their family members. However, it is also a fact that the police personnel have odd duty hours of no fixed time and also get fewer incentives. This makes their adjustment disturbed; they don't have much opportunity to take their own decisions.

On the other hand, the general government employees enjoy their work with all flavors and have full mental piece. They have more opportunities to take their decisions re-lated to their assignments and have reasons for their choices.

The result table indicates that the mean value for sexual adjustment of general gov-ernment employees was 9.6 and that of police personnel was 9.03 and SD = 5.03 and 6.18 respectively. The SE_D was 1.107 and the t-value of sexual dimension of global adjustment was 0.38 with df = 58 the value was insignificant. Though, the mean scores were marginally different. The present findings are supported by Johnson et. al., (1998).

The table revealed that the police personnel have high social adjustment (M= 14.4, SD = 8.15), in comparison to the general government employees (M = 12.3, SD = 7.24). The t-value of 1.03 with df = 58 is insignificant. Everybody wants to develop upward and actualize himself. Due to strict job hierarchy and strict discipline the police personnel deals the public in a better way to meet out their problems. We know that police personnel are the key players to maintain peace in the society. The society feels safe it is only because of the police personnel who put their best efforts and have a respectable image. Dealing with the public of different nature in their routine job. They join the service to serve the society and country and being social is very essential. Having more exposure to different cultures, areas, regions, and societies and can have the ability to adjust according to the demands of the situation. The results are also supported by Kulshrestha (1979) who explained that the adjustment process is a way in which the individual attempts to deal with stress, tensions, conflicts etc., and meet his or her needs. In this process, the individual also makes efforts to maintain harmonious relationships with the environment and develops a sound relationship.

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Suicide in relation to role stress, work schedule and per-sonality of working women

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ABSTRACT

Stress is a common problem in modern life that affects both mental & physical health. It is a transaction between the environment and the individual. In professional life the stress faced by the employees is substantial. Sometimes stress is built into the job itself yet not all employees face stress the same way. The major signs of stress is depression and in some extreme cases suicide. This study concentrates on the role stress of working women. Working women constitute a large proportion of the entire work force and from that point of view addressing the problems they might face is very important. Major concern is role stressor during working hours which is studied under the heading of work schedule with the different shades of personality where a person acts & reacts to his/her environment and in the course of such action & reaction adapts to it. The sample consisted of 240 married working women 120 from each fixed and erratic work schedules within the age range of 30 to 45years belonging to Uttarakhand and Orissa on availability basis. High role stress promotes suicide ideation in general, but neurotics and introverts are more susceptible to the effects of high role stress in relation to suicide ideation.

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All over the world industrialization and globalization has brought up the growing number of women joining the workforce of a country. Women of today have reached the ultimate heights in terms of achievement but they have not been able to turn themselves away from the duties of mother, wife and the care-taker of the family. Thus a working woman always remains in a state of stress and strain. Their inclinations towards job, keep them incompatible with household works. Their adjustment and role relations satisfactions, child-care, marital life, cause conflicts and guilt. The ultimate result being that the mental health is negatively affected. Stress generated out of role-playing is called as role-stress which is major work-place related stressor acting negatively towards the mental health of working women. Another major workplace related stressor is the schedule of working. A long working schedule, along with irregular working hours is naturally more stressful than fixed working schedule where some sort of previous planning helps to reduce the stress level of working women.

According to the definition offered by stress is considered as a negative emotional state (fundamentally anxiety, depression and hostility), accompanied by physiological changes and produced by subjects' perception that they are overloaded or threatened by the demands of their environment (in this case work) and lack the skills or resources to cope with them (sense of uncontrollability). In work contexts job demands can be of various types, and research regarding their possible effects is abundant, and it addresses not only how the person is affected (cardiovascular diseases, eating or sleeping disorders, depression, etc.), but also the effects on the organization (reduced levels of performance, absenteeism, lack of commitment, etc. Some of the most commonly found stressors are lack of job security and control, overload and competitiveness at work and role conflict and ambiguity.

Bruke (2007) examined the potential predictors of suicidal ideation among a large sample of Norwegian police officers. Predictors inclined personal demographics, work situation characteristics, job demands, burn out components, work outcomes and coping responses. This study aims to find out the effect of role stress work schedule and personality on suicide ideation among married working women.

Aasland et al(1995) found that stress deriving from job demands and patient expectations was higher among female physicians and was linked with higher levels of health complaints (musculoskeletal pain, headaches, digestive problems). Such stressors as dealing with emotionally difficult situations, a fast and demanding pace of work, high job demands, and being exposed to illness

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were associated with exhaustion, insomnia, back pain, fatigue, and depression among nurses.

Finally it is the personality which determines how and to what extent an individual will be prone to the effects of stress. Different studies have tried to find out the relation between personality and its role in determining the mental stress and its related negative effects.

Risks of suicidal behavior are increased amongst young people with particular personality characteristics, (Brent, D.A., et al,1994, Beautrais, A.L.,et al,1999) namely high level of neuroticism, hopelessness, impulsivity, risk taking, and low self esteem. First, certain personality traits (neuroticism, for ex.) act as predisposing factors for mental disorders. Second, these personality traits may influence the ways in which young people react to adverse life events. Similar personality traits (hopelessness, neuroticism, anxiety, timidity, cognitive rigidity, impulsivity, aggression and a strong sense of personal independence) have been shown to be associated with suicidal behaviors in adults and older adults.(Conner, K.R., et al, 2002).Studies have shown the various negative ef-fects of workplace related stressors.

Objectives of the study are to enumerate the effects of work schedule, role stress at work place and the personality of working women on suicide ideation and also to find out the role of mutual interactions among these independent variables in determining the ideation of suicide.

METHOD OF STUDY

Sample

The sample consisted of 240 married working women 120 each from fixed and erratic work schedules within the age range of 30 to 45years having two issues living with husband or his family belonging to different professions (security, medical, banking, railway and teaching services) selected from different cities of Uttarakhand and Orissa on availability basis.

B) Psychological tests used for data collection:

- 1) Scale for suicide ideation.(1974) *Author: Aron Beck, Maria kovacs, Arlena Weissman.*
- 2) Role stress scale for Working Women(1999) *Author: Dr.Taresh Bhatia & Dr. K.B. Lal Srivastatva .*
- 3)Eyesneck's personality Inventory (Hindi adaptation)(1976) *Author: Giridhar Prasad Thakur*

Statistical Techniques

ANOVA and 't' test is applied to carry out main effects and interactions among independent measures on suicide ideation among working women. The research paradigm proceeds with structuring of three independent measures role stress (two levels high and low) personality with (three levels introversion, extroversion and neuroticism) and work schedule (two levels fixed and erratic) having 20 subjects in each cells

Research Paradigm:

LEVELS	NEUROTIC		EXTROVERT		INTROVERT		Σ
	FIXED WORK SCHEDULE	ERRATIC WORK SCHEDULE	FIXED WORK SCHEDULE	ERRATIC WORK SCHEDULE	FIXED WORK SCHEDULE	ERRATIC WORK SCHEDULE	
HIGH ROLE STRESS	215	247	204	223	214	252	1355
LOW ROLE STRESS	194	206	203	213	201	198	1215
Σ	409	453	407	436	415	450	2570

Results

THE ANOVA SUMMARY ($\alpha .05$)

Table No1. SUICIDE IDEATION : THE ANOVA SUMMARY ($2 \times 2 \times 3$) TRIVARIATE FACTORIAL DESIGN

SOURCE OF VARIANCE	S. S.	df	M. S.	F	P
TREATMENT	191.29	11			
ROLE STRESS	81.67	1	81.67	41.24	< 0.01
WORK SCHEDULE	48.60	1	48.60	24.55	< 0.01
PERSONALITY	3.56	2	1.78	0.89	N.S
ROLE STRESS \times WORK SCHEDULE	20.42	1	20.42	10.31	< 0.01
ROLE STRESS \times PERSONALITY	24.0	2	12.0	6.06	< 0.01
WORK SCHEDULE \times PERSONALITY	1.42	2	0.71	0.36	N.S
ROLE STRESS \times WORK SCHEDULE \times PERSONALITY	11.62	2	5.81	3.19	< 0.01
ERROR	452.30	228	1.98		
TOTAL	643.59	239			

**Table No2. BREAK UP : ROLE STRESS \times WORK SCHEDULE (2×2) BIVARIATE
INTERACTION**

H_0 s	GROUPS		N	M	SD	SE _D	df	t	P
I	HIGH ROLE STRESS	FIXED WORK SCHEDULE	60	10.56	1.63	0.33	118	4.45	<0.01
		ERRATIC WORK SCHEDULE	60	12.03	1.57				
II	LOW ROLE STRESS	FIXED WORK SCHEDULE	60	9.96	1.08	0.26	118	1.23	N.S
		ERRATIC WORK SCHEDULE	60	10.28	1.25				
III	FIXED WORK SCHEDULE	HIGH ROLE STRESS	60	10.56	1.63	0.29	118	2.07	<0.05
		LOW ROLE STRESS	60	9.96	1.08				
IV	ERRATIC WORK SCHEDULE	HIGH ROLE STRESS	60	12.03	1.57	0.39	118	4.49	<0.01
		LOW ROLE STRESS	60	10.28	1.25				

TableNo 3.BREAK UP : ROLE STRESS \times PERSONALITY (2×3 BIVARIATE INTERACTION)

H _{0s}	GROUPS		N	M	SD	SE _D	Df	T	P
I	HIGH ROLE STRESS	NEUROTIC	40	11.55	1.58	0.33	78	2.63	<0.01
		EXTROVERT	40	10.68	1.40				
II	HIGH ROLE STRESS	NEUROTIC	40	11.55	1.58	0.43	78	0.23	N.S.
		INTROVERT	40	11.65	2.25				
III	HIGH ROLE STRESS	EXTROVERT	40	10.68	1.40	0.41	78	2.36	<0.05
		INTROVERT	40	11.65	2.25				
IV	LOW ROLE STRESS	NEUROTIC	40	10.0	1.05	0.25	78	1.6	N.S.
		EXTROVERT	40	10.4	1.20				
V	LOW ROLE STRESS	NEUROTIC	40	10.4	1.05	0.29	78	0.10	N.S.
		INTROVERT	40	9.97	1.15				
VI	LOW ROLE STRESS	EXTROVERT	40	10.4	1.20	0.26	78	1.65	N.S.
		INTROVERT	40	9.97	1.15				
VII	NEUROTIC	HIGH ROLE STRESS	40	11.55	1.58	0.30	78	5.16	<0.01
		LOW ROLE STRESS	40	10.0	1.05				
VIII	EXTROVERT	HIGH ROLE STRESS	40	10.68	1.40	0.29	78	0.97	N.S.
		LOW ROLE STRESS	40	10.40	1.20				
IX	INTROVERT	HIGH ROLE STRESS	40	10.65	2.25	0.40	78	4.2	<0.01
		LOW ROLE STRESS	40	9.97	1.15				

 $t_{0.05}(78) = 1.98$ $t_{0.01}(78) = 2.62$

Table No4. BREAK UP : ROLE STRESS \times WORK SCHEDULE \times PERSONALITY ($2 \times 2 \times 3$ TRIVARIATE INTERACTION)

HOS	GROUPS		N	M	SD	SED	DF	T	P
I	NEUROTIC FIXED	H.R. STRESS	20	10.75	1.11	0.32	38	3.28	< 0.01
		L.R. STRESS	20	9.7	0.90				
II	EXTROVERT FIXED	H.R. STRESS	20	10.2	1.54	0.41	38	0.12	N.S.
		L.R. STRESS	20	10.75	0.98				
III	INTROVERT FIXED	H.R. STRESS	20	10.57	2.57	0.63	38	1.11	N.S.
		L.R. STRESS	20	10.05	1.1				
IV	NEUROTIC ERRATIC	H.R. STRESS	20	12.35	1.63	0.44	38	4.66	< 0.01
		L.R. STRESS	20	10.3	1.08				
V	EXTROVERT ERRATIC	H.R. STRESS	20	11.15	1.22	0.59	38	1.22	N.S.
		L.R. STRESS	20	10.65	1.38				
VI	INTROVERT ERRATIC	H.R. STRESS	20	12.6	1.43	0.41	38	6.58	< 0.01
		L.R. STRESS	20	9.9	1.16				
VII	NEUROTIC H.R. STRESS	FIXED	20	10.75	1.11	0.47	38	3.40	< 0.01
		ERRATIC	20	12.35	1.63				
VIII	EXTROVERT	FIXED	20	10.2	1.54	0.44	38	2.16	< 0.05

Interpretation of results:

The results show that the means scores of suicide ideation is higher in women with high role stress in both fixed and erratic work schedule. This indicates that high role stress promotes suicide ideation independent of work schedule.

Table 2 shows that for neurotics extroverts and introverts, high role stress produces high level of suicide ideation. This is indicated in the higher mean scores of suicide ideation for high role stress. Again a comparison of neurotics and extroverts show higher level of suicide ideation for neurotics than extroverts. Similar results are obtained when we compare introverts and extroverts. This may be interpreted as high role stress has serious effect on neurotics and introverts than extroverts. In other words, high role stress promotes suicide ideation in all the three groups, but neurotics and introverts are more susceptible to the effects of high role stress in explaining suicide ideation.

Table 3 shows erratic work schedule promotes suicide ideation. This is indicated in the higher mean score of suicide ideation in women in erratic schedule

than in women working in fixed schedule. This is true for all the three groups, i.e. neurotics, extroverts and introverts. It established the fact that erratic work schedule promotes suicide ideation.

Table 4 shows that neurotics have higher mean on suicide ideation scores than extroverts and introverts with high role stress whereas extroverts working in fixed work schedule have the lowest mean score. It factualises that neurotic personality trait promotes suicide ideation.

Discussion and conclusion:

The findings of the present study point to the fact that high role stress promotes suicide ideation independent of personality traits and work schedule. This finding stands congruent with some other findings, Mojoinola,1984; Olaleye,2002.

Secondly, personality characteristics particularly neuroticism enhances suicide ideation. To a great extent people are susceptible to different environmental stimuli as the resulting negative effects are found by some other studies conforming the findings of the present study (Kerby,2003; Lolas,Gomez&Snerez,1991)

Thirdly, irregular work schedule involving long and unstructured pattern in working hours promotes suicide ideation. An erratic work schedule has a negative effect on mental health and the results of other researchers studies are in the similar direction, Part et al.(2001).

Stress can have a deleterious effect on health and well-being.(Mojoinola, 1984; & Olaleye,2002). Considering the growing number of working women in the population and the number of suicides, it was apt to carry out this study dealing with the negative effects of various job stressors particularly on suicide ideation. Role stress is a potent job stressor which includes among other variables role-conflict, role overload, role ambiguity etc. Studies have tried to explain that involvement in multiple roles reduces the time and energy available to carry out all the roles with equal efficiency thus creating stress and strain So like any

other stressful event role stress is assumed to produce negative effect on physical and mental health (Goode, 1960). More intense the conflict more likely it affect the working women negatively affected. According to the definition given by Lazarus and Folkman (1984), stress is a negative emotional state which is produced by the individual's perception of the load or threat of the environment and lack of skills to cope with them. In case of job stressor it is the demands of the work environment which produces the stress. Studies have reported that many law enforcement officers have died or have committed suicide due to stress on the job. (Lindsey, Dennis&Sean Kelly, 2004). Some other studies have shown the effects of job demands on a person (cardiovascular diseases, eating or sleeping disorder, depression) along with their effect on the organization (Salanova, Llorens, CifreMartinez & Schaufeli, 2003). Present study aimed to find whether role stress promotes suicide ideation in working women and the results show higher mean scores of suicide ideation in women with high role stress in both fixed and erratic work schedule. It might be safely concluded that role stress promotes suicide ideation independent of work schedule.

Another question that this study tried to answer is whether personality characteristics helps to explain the suicidal behavior in individuals. The results have shown that neurotic characteristics promote suicide ideation whereas extroverts are less susceptible to role stress and have little suicide ideation. A neurotic person is one who is highly upset physically and emotionally, is over responsive and reacts too strongly to all sorts of stimuli therefore it is natural that such persons are prone to effects of role stress more than an extrovert. An Extrovert on the other hand, is a person without cares, full of hopes. The basic nature might neutralize the effect of stress or lessen it to some extent. Studies have indicated neuroticism is positively related to suicidal thinking (Kerby,2003; Lolas,Gomez & Suarez,1991,Velting,1999).

Increased suicidal ideation has also been associated with low levels of Extraversion which reflects a low propensity to experience positive emotions

(Kerby,2003;Lolas et al,1991). The results of the present study conform to the previous studies findings that neurotics are more prone to suicide ideation than extroverts.

The third question this study aimed to answer was whether an erratic work schedule explains suicidal behavior. An erratic work schedule includes long, irregular pattern of working hours. Particularly for working women who have to constantly balance between the demands of different roles, irregular working hours increases the stress level generated by the demands of the workplace. Shields (1999) found that long working hours had a significant effect on the morbidity of major depressive episodes in women. Procter et al (1996) reported increased overtime work was significantly associated with increased feeling of depression. In his study Violanti, 2008 found that women officers working day shifts are more likely to be relates to depression and suicide ideation. However, some research findings (Chattopadhyay & Dasgupta,1999) do not match with the findings of present research on role stress.

In the light of above discussed studies it might be concluded that the job stressors have negative effect on mental health, particularly the combination of effects may explain depression and consequently suicide ideation in general, however broader generalization one needs study with more accurate sampling and structuring with other variables of concern which have an effects in dis-guised form on job stressors.

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The Significance of Loneliness for Mental Health: A Literature Review

Neha Pandeya

Abstract

Loneliness has a major influence on psychosocial problems, mental health, and physical well-being. Loneliness is adversely related to mental health is not surprising, although the direction of causality is difficult to determine. Alleviation of loneliness may improve physical health and decrease psychosomatic complaints on health. Chronic loneliness has the potential to substantially interfere with psychosocial functioning, mental health, and physical health, and should therefore be the subject of intervention efforts. Loneliness has been demonstrated to be associated with a number of psychosocial difficulties (e.g., low self-esteem, low social competence, poorer quality social interactions), as well as mental health problems (e.g., anxiety, depression, suicidal behaviours), and physical health issues (e.g., poorer immune and cardiovascular functioning, sleep deficiencies). In the present review, loneliness is introduced as an exemplar of social relationship deficits. Here a definition of loneliness is provided, as well as an explanation of why it may pose a situation of concern.

Social relationships are at the core of human life. Satisfying social relationships are vital for good mental and physical health. Indeed, the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) highlights the fact that relational problems sometimes warrant the focus of clinical attention because they may cause clinically significant distress, and/or complicate the treatment of, or intensify mental disorders/general medical conditions. After an extensive recent review of the extant literature, Heinrich and Gullone (2006) concluded that loneliness is a crucial marker of social relationship deficits. Moreover, these authors argued that 'loneliness should command clinician's attention in its own right—not just as an adjunct to treatment of other problems such as depression' (p. 695).

The phenomenon of loneliness is difficult to define yet it is one of most important dimensions of human behavior. In the social sciences, the oldest publication about loneliness is *Über die Einsamkeit* (Zimmermann, 1785–1786). The attention to the concept of loneliness began in the 1950s and 1960s; with publications by Fromm Reichmann (1959). To date, the experts have not agreed upon a definition. Further, there are neither defined theoretical frameworks which explain loneliness nor is there any consensus regarding the causes and consequences. Loneliness has been defined as the aversive state experienced when a discrepancy exists between the interpersonal relationships one wishes to have, and those that one perceives they currently have (Peplau & Perlman, 1982). Such a definition highlights the affective character of loneliness. Specifically, that it is an emotionally unpleasant experience. But it also emphasizes the cognitive element. That is, that loneliness requires the perception that one's social relationships are not living up to some expectation. As such, loneliness signals that one's personal relationships are in some way inadequate, and it is therefore a key marker of social relationship difficulties. Loneliness is a subjective experience that can be related to but is not synonymous with social isolation. It has been described as a sad subjective state resulting from dissatisfaction with one's social experiences (Youngblade, Berlin, & Besky, 1999.p.136). Loneliness as a complex set of feelings and cognitions reflects the distressing and negative emotional experience emanating from the individual's perceived deficiencies in intimate and social relationships (Ernst & Cacioppo, 1999; Rotenberg, 1999; Perlman, 1988). There is however, a general consensus among researchers about the inevitability of loneliness (Medora & Woodward, 1986). Loneliness is viewed as a painful experience that is an inevitable part of living (Russell, 1996), and is associated with unmet needs (Weiss, 1973).

Many authors (e.g., Hymel, Tarulli, Hayden Thomson, & Terrell-Deutsch, 1999; Rotenberg, 1999a; McWhirter, 1990; Medora & Woodward, 1986; Peplau & Perlman, 1982) have contended that loneliness is a basic fact of life and thus experienced to differing extents by everyone at some stage in their life. Wood

(1986) has even suggested that “failure to experience loneliness appropriately calls into question one’s very nature as a social being” (p. 184). Loneliness does not respect the boundaries of age, gender, race, marital status, socioeconomic status, or health status (Neto & Barros, 2000; Medora & Woodward, 1986). Thus, loneliness is a universal experience, a consequence of the universal human need to belong (Rotenberg, 1999a). Feelings of loneliness may be either persistent or short-lived (Peplau & Perlman, 1982). However, while transient feelings of loneliness are often situationally determined and normative, chronic feelings of loneliness are a cause for concern (Asher & Paquette, 2003; Neto & Barros, 2000).

The Significance of Loneliness for Mental Health

As already noted, while loneliness can be a normative experience, it also has the potential to be pathological (Asher & Paquette, 2003). Indeed numerous researchers (Kupersmidt, Sigda, Sedikides, & Voegler, 1999; Page, Wyre, & Cole, 198; Blai, 1989 ; Fromm-Reichman, 1959) have asserted that loneliness has a major influence on psychosocial problems, mental health, and physical well-being.

Loneliness and Psycho-Social Difficulties

Loneliness has been found to be significantly associated with shyness, neuroticism, social withdrawal, and a lower frequency of dating, as well as extra-curricular and religious participation (Stephan, Faeth, & Lamm, 1988; Hojat, 1982b; Horowitz, French, & Anderson, 1982; Jones, Freemon, & Goswick, 1981; Russell et al., 1980). Associations between loneliness and poorer social interaction quality have also been demonstrated (Hawkley et al., 2003, Segrin, 1998; Rotenberg, 1994; Jones et al., 1982; Wheeler et al., 1983). Loneliness has also been linked to low social competence, peer rejection and victimization, a lack of high quality friendships, and more negative appraisals of social support (Kochenderfer & Ladd, 1996; Crick & Ladd, 1993; Parker & Asher, 1993; Riggio, Watring, & Throckmorton, 1993; Rubin & Mills, 1988). Larson (1999) has also observed that lonely adolescents are rated by parents and teachers as less well-

adjusted. Moreover, loneliness has been found to be associated with higher school dropout rates (Asher & Paquette, 2003), poor academic performance (Larson, 1999; Rotenberg, 1999b; Rotenberg & Morrison, 1993), and juvenile delinquency (Brennan, 1982). However, perhaps most pertinent to the issue of psychosocial problems is the consistent finding that loneliness is associated with low self-esteem (Larson, 1999; Brage, Meredith, & Woodward, 1993; Kamath & Kanekar, 1993; Riggio et al., 1993; Olmstead, Guy, O'Mally, & Bentler, 1991; Hymel, Rubin, Rowden, & LeMare, 1990). Yet, despite the typically lower self-esteem of lonely people, Cacioppo et al. (2000) have reported that lonely people have no less social capital to offer than nonlonely people.

Loneliness and Mental Health problems

Also supporting the contention that satisfying social relationships are vital for good mental health, loneliness has been found to be inversely correlated life satisfaction (Schumaker, Shea, Monfries, & Groth-Marnat, 1993; Schultz & Moore, 1988). That is, lonely people seem to be less satisfied with their lives. That loneliness is also adversely related to mental health is therefore not surprising, although the direction of causality is difficult to determine. Consistent with Goswick and Jones' (1981) observation that loneliness is associated with poor personality integration, the DSM-IV-TR (American Psychiatric Association, 2000) notes that loneliness is an associated feature of both Avoidant Personality Disorder, and Borderline Personality Disorder. Overholser (1992) has also found loneliness to be associated with a dependent personality style.

Other empirical investigations have linked loneliness to anxiety (Mijuskovic, 1986), and more specifically, social anxiety (Anderson & Harvey, 1988; Moore & Schultz, 1983), as well as to schizophrenia (Neeleman & Power, 1994; DeNiro, 1995). Numerous studies have demonstrated substantially sized correlations (coefficients ranging from .40s to .60s) between loneliness and depression in adolescents (Chang, Sanna & Bodem, 2008; Mahon, Yarcheski , Yarcheski, 2001; Koenig & Abrams, 1999; Koenig, Isaacs & Schwartz, 1994; Kirkpatrick-Smith, Rich, Bonner, & Jams, 1991; Moore and Schultz, 1983) .Indeed,

Weeks et al. (1980) have asserted that loneliness and depression may share some common causes such as poor social skills, shyness, and a maladaptive attribution style (Dill & Anderson, 1999). Yet despite the apparent overlap in common features of depression and loneliness, they appear to be distinct phenomena (for example, see Anderson & Harvey, 1988; Anderson, Horowitz, & French, 1983; Koenig & Abrams, 1999; Weeks et al., 1980). In distinguishing between the two, it has been noted that whereas loneliness involves appraisals across the social domain of one's life, depression is a more global and heterogeneous condition involving appraisals across multiple domains (Boivin et al., 1995).

Loneliness may also be a vulnerability factor for suicide ideation, parasuicide (suicide attempts/self-inflicted injury), and suicide completion. In research conducted with people who have attempted suicide, loneliness has often been described as a prompting factor for the attempt (Nordentoft & Rubin, 1993; Maris, 1981; Wenz, 1977; Bancroft, Skrimshire, & Simkins, 1976; Birtchnell & Alarcon, 1971).

Loneliness and Physical Health Issues

In addition to the mental health problems just described which have obvious negative influences on physical wellbeing. Cacioppo, Hawkley, Crawford et al. (2002) found that recreational drug use was higher amongst lonely students. Loneliness has also been linked to dietary restraint (Rotenberg & Flood, 1999), eating disorders (Coric & Murstein, 1993; Gilbert & DeBlassie, 1984), and obesity (Schumaker, Krejci, Small, & Sargent, 1985). Loneliness has been linked to nausea, headaches, and eating disturbances (Page & Cole, 1991; Ponzetti, 1990), sleep disturbances (Cacioppo, Hawkley, Berntson et al., 2002; Cacioppo et al., 2000), fatigue (DiTommaso & Spinner, 1997), poorer immune functioning (Kiecolt-Glaser, Garner et al., 1984; Kiecolt-Glaser, Ricker et al., 1984), poorer cardiovascular functioning (even after controlling for depression; Cacioppo, Hawkley, Crawford et al., 2002), and serious illness (Lynch, 1977).

Loneliness has also been associated with less frequent health-promoting behaviours (Mahon, Yarcheski, & Yarcheski, 2001; Schwarzer, Jerusalem, & Kleine, 1990) and more frequent high-risk behaviors (Pe´rodeau & du Fort, 2000; Schwarzer et al., 1990). In studies with both adolescents (Mahon et al., 2001; Schwarzer, Jerusalem, & Kleine, 1990), and adults (Mahon, Yarcheski, & Yarcheski, 1998), in which loneliness was found to be associated with poorer health practices (e.g., alcohol and drug use, smoking) and fewer health-promoting behaviors (e.g., less exercise, less relaxation, poor nutrition). The accrual of loneliness effects with age is well illustrated in a longitudinal study (Caspi, Harrington, Moffitt, Milne, & Poulton, 2006). In this study, social isolation in childhood and feelings of loneliness in adolescence and young adulthood predicted how many cardiovascular risk factors (e.g., body mass index, waist circumference, blood pressure, cholesterol) were elevated in young adulthood (mean age = 26 years). Moreover, the number of developmental occasions (i.e., childhood, adolescence, young adulthood) at which participants were lonely predicted the number of elevated risk factors in young adulthood. These data suggest that the effects of loneliness accrue in a dose-response fashion to accelerate the rate of physiological decline. Poor health behaviors are appealing mechanistic candidates for associations between loneliness and health. High-calorie, high fat diets and sedentary lifestyles, for example, contribute to being overweight or obese, major risk factors for disease in Western society. Hawkey & Cacioppo (2007) in survey of over 2,500 OSU undergraduates (mean age = 19.1 years), found that loneliness was associated with a slightly greater body mass index (BMI). In a large cross-sectional survey of 1,289 adults 18 years and older (mean age, 46.3 years), the lonely group had a higher mean BMI and a greater proportion of overweight/obese individuals than the nonlonely group did (Lauder, Mummery, Jones, & Caperchione, 2006). Regarding sedentary lifestyles, however, neither our OSU study of young adults nor the wide age-range sample surveyed by Lauder et al. (2006) revealed loneliness differences in physical activity. On the other hand, in Lauder et al.'s (2006) sample, smoking

was more prevalent in the lonely group than it was in the nonlonely group. It should also be noted that as with all the associations between loneliness and health, it is difficult to establish the direction of causality.

Several studies have demonstrated that lonely people make greater use of the health care system compared to non lonely people. Geller, Janson, McGovern, and Valdini (1999) conducted an investigation with 164 emergency department patients, and observed a significant correlation between loneliness and the total number of hospital emergency department visits made in the space of 1 year. While loneliness was not associated with chronic disease, severity of illness, number of hospital admissions, or differing reasons for visiting the emergency department, lonely patients visited the emergency department 60% more often than non lonely patients. There also appears to be a preponderance of lonely people amongst the callers of crisis centre hotlines. In addition to pregnancy, family problems, and drug addiction, Saks (1974) and Bleach and Claiborn (1974) determined that loneliness was one of the most frequently cited reasons why youths sought help via a crisis centre hotline. Indeed, Sermat's (1980) research suggests that loneliness is a complaint of as many as 80% of crisis centre callers.

Summary

Thus, in summary, loneliness has been demonstrated to be associated with a number of psychosocial difficulties (e.g., low self-esteem, low social competence, poorer quality social interactions), as well as mental health problems (e.g., anxiety, depression, suicidal behaviours), and physical health issues (e.g., poorer immune and cardiovascular functioning, sleep deficiencies). Moreover, some sufferers of loneliness exhibit problematic behaviours such as alcohol or drug abuse, and symptoms including eating or sleep disturbances, fatigue, headaches, as well as disorders including anxiety, or depression, without even realizing the possible involvement of social problems (Murphy & Kupshik, 1992; Rook & Peplau, 1982; Young, 1982). Nevertheless, irrespective of whether it is recognized as such, chronic loneliness has the potential to substantially interfere with

psychosocial functioning, mental health, and physical health, and should therefore be the subject of intervention efforts. Alleviation of loneliness may improve physical health and decrease psychosomatic complaints on health.

Future Directions

Given the scarcity of longitudinal and experimental research, in discussing the features typically experienced by lonely people, the present review has primarily focused on correlational studies. As such, it is difficult to establish the direction of causation between loneliness and the features commonly associated with it. Moreover, the role of gender needs to be explored. Efforts should be directed at changing the thoughts, behaviours, and emotion regulation strategies that promote the persistence of loneliness into adulthood. Intensive empirical intervention and treatment research aimed specifically at preventing and alleviating the harmful consequences of severe and persistent loneliness are long overdue. Prospective, longitudinal studies of loneliness and its alleviation are very much needed.

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**An Empirical Investigation of the Utility of Word
Association Emotional Indicators *Sushma Upmanyu,
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Abstract

The word association technique has long history in experimental psychology. Jung's work stimulated numerous investigations. Jung and his associates found several indicators that were associated with inner complexes of the subject and repressed emotions containing such elements as failure and anxiety. A great multitude of complex indicators cropped up after the association experiment was first propounded as a diagnostic tool. In view of Jung's assertion the present study was conducted to examine the diagnostic utility of joint occurrence of word association emotional indicators. Two hundred fifty male university students took Modified Kent–Rossanoff Word Association Test, IPAT Anxiety Scale Questionnaire, Eysenck Personality Questionnaire, Torrance Test of Creative Thinking, Figural and Verbal From A; and MMPI -psychopathic deviant subscale Word Association Test was scored for unique responses (UR), long reaction time (LRT), repetition of stimulus before responding (RSBR.), forgetting (Fg) and misremembering (w), and response repetition (RR). The simultaneous occurrence of UR-LRT-RR and UR-LRT –W emerged to be a more valid criteria for validating the utility of simultaneous occurrence of these emotional indicators for diagnosing individuals who are “at risk” with respect to a variety of adjustment problems later in life.

The findings revealed that the simultaneous occurrence of LRT-RSBR are useful for diagnosing suspiciousness or paranoid type insecurity and si-

multaneous occurrence of UR-LRT-RR and UR-LRT-W are useful for identifying psychosis proneness and psychopathic deviation.

The word association technique has a long history in experimental psychology. It is beyond doubt that the word association method, sometimes called the free association technique, is one of the oldest procedures in personality testing and this technique has antedated the flood of projective tests by more than half a century. The word association test is said to tap many areas of ideation and to suggest conflicts which might appear in different types of maladjustment.

Jung's work stimulated researchers for locating new indicators in word association test performance that might help in revealing cognitive and emotional disturbance. Many studies (Upmanyu, Bhardwaj, & Singh, 1996; Upmanyu & Upmanyu, 1998; Upmanyu, & Singh, 1984; Upmanyu, Gill, & Singh, 1984) have attempted to relate unusual word associations to various personality and cognitive factors. This research has shown little consistency in findings, where it has received both confirming and disconfirming evidence, and while there have been attempts at integration, these have not been successful. The present state of literature relating word associations to personality and cognitive measures does not enable one to unequivocally replicate any previous studies

There is substantial evidence (e.g., Chapman & Chapman, 1973; Johnston, 1974; Miller & Chapman, 1983; Silverstein & Harrow, 1983; Upmanyu & Singh, 1984; Upmanyu, Gill, & Singh, 1982) which has indicated that schizophrenics' responses on the Word Association Test (K-R WAT; Kent & Rosanoff, 1910) are more unusual than those of normal participants. As representative of published negative findings, one can undoubtedly cite the research findings of Andres et al. (1974), Schwartz (1978a, 1978b) and Rattenbury, Silverstein, DeWolfe, Kaufman, & Harrow (1983) which failed to corroborate

the evidence that schizophrenics give more unusual word associations than normal subjects. Likewise, many attempts to relate word association indicators to different personality dimensions in non clinical groups have generally failed.

A major problem in equating unusual word associations only with psychiatric malfunction is that unusual word associations have also been found to be indicative of creativity (Barron, 1965,1969; Guilford, Christensen, & Lewis,1951, Meltzman,1960; Mednick,1962; Upmanyu, Gill, & Singh,1982; Upmanyu & Singh,1984). In line with these studies, Gough (1976) made an attempt to study creativity by means of word associations test. The study indicated that moderately infrequent word associations were more strongly related to creativity than extremely remote word associations or common word associations. "From a theoretical perspective, the finding that moderately unusual associations are critical is worthy of attention. Associations that are less atypical seem to be indicative of the kind of new perspectives and original reactions that are almost by definition a part of the creative process" (Gough,p.352). However, because psychiatric disturbance was not assessed in Gough's study, it would be dangerous to link only creativity and not psychiatric disturbance with even moderately infrequent word associations. As a consequence, it becomes difficult to arrive at a conclusion about simple creativity correlates of word associations.

Furthermore, ample evidence (Brown, 1965, 1970; Hundal & Upmanyu, 1981; Innes, 1982; Kuntz, 1974; Laffal, 1955; Paivio, Yuille, & Madigan,1968; Penk, 1978; Shiomi, 1979; Upmanyu, 1981) have indicated that the characteristics of stimulus words (e.g., response entropy, affective connotation of stimulus words) have a demonstrable effect on word associations test performance . As a consequence, it would be unwise to assume emotional disturbance or creativity, or both, on the basis of word association emotional indicators. Although this conclusion may be disquieting to researchers who use verbal material to study such topics such as perceptual defense and repression, it is not unconditional.

Green & Galbraith (1986) stated that “by paying close attention to the selection of stimulus words ... word association test might have demonstrable value for certain assessment purposes.” To circumvent this omission, the present study controlled response entropy (expansiveness and randomness of word associations) as suggested by Laffal (1955) and Upmanyu (1981), by selecting 70 average response entropy stimulus words of Kent - Rosanoff Word Association Test (Upmanyu, Bhardwaj, & Singh, 1996).

Another methodological issue stems from the observation that the earlier researches have focused on the study of single emotional indicator at a time for the same stimulus word with a consequent neglect of studying simultaneous occurrence of two or more emotional indicators for the same stimulus word as criteria for emotional disturbance. In psychoanalytic literature, the notion is some-times expressed or implied that when a stimulus word evokes a single complex sign, no particular significance is to be attached to it, but if two or more signs appear at the same time, the combination at once becomes decidedly significant (Dooley, 1916). A further possibility was indicated by Smith (1922) when he wrote that “prolongation of reaction time alone is not necessarily a complex – indicator, it is only significant if accompanied by other indicators” (p.65). Researches of Hull & Lugoff (1921) and Brown (1965) revealed that some emotional indicators tended to conoccur, but failed to explore the common determinant for want of external measures of emotional disturbance in the purview of their studies.

The simultaneous occurrence of two or more word association emotional indicators as criteria for emotional disturbance, while of great interest and practical importance has not been investigated systematically by previous researchers. There is at least a possibility that the simultaneous occurrence of two or more word association emotional indicators at the same stimulus words is more valid than the single word association emotional indicator for identifying emo-

tional disturbance.

Objectives

The main objective of the current study was to identify whether the simultaneous occurrence of two or more word association emotional indicators for each stimulus word is more valid for identifying emotional disturbance than the occurrence of single word association emotional indicator, for each stimulus word, in non-clinical sample.

Method

Sample:

A non clinical sample of 250 university students in the age range of 21-25 years residing in University hostels participated in this study. The subjects be-longed to different faculties. The selected subjects were required to be (a) show-ing no evidence of acute confusional state, brain damage, alcoholism, or drug addiction, and (b)not currently in treatment for a diagnosed psychiatric illness. The participants were contacted individually and were assured of anonymity and confidentiality.

Tests Used:

Five standardized tests were used for collecting data: (a) Modified Kent Rossanoff Word Association Test (Kent - Rosanoff , 1910)

The Kent – Rossanoff Word Association Test is a widely used test in both the laboratory and clinic for more than half a century. The test consists of 100 common words, mostly nouns and adjectives. In the current study, following Laffal (1955) and Upmanyu (1981), seventy stimulus words with average response entropy value (response expansiveness) were used. The test has been extensively used in India and found useful for examining emotional disturbance (Hundal & Upmanyu,1974,1981; Upmanyu, Gill, & Singh,1982; (Upmanyu,

Bhardwaj, & Singh,1996).

(b) IPAT Anxiety Scale Questionnaire (Cattell & Scheier,1963)

The IPAT Anxiety Scale Questionnaire is a brief, non stressful, clinically valid questionnaire for measuring anxiety. The questionnaire consists of 40 questions distributed among the five anxiety measuring factors, namely Factors Q₃, C, L, O, Q₄. The test has been used in India and found to possess adequate psychometric characteristics (Hundal & Upmanyu, 1974, 1981; Upmanyu & Singh,1984; Upmanyu & Upmanyu, 1998; Upmanyu & Bhardwaj, & Singh,1996). The reliabilities have been found to range from .70 to .82

(c) Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975) Eysenck Personality Questionnaire as currently constituted presents a three dimensional analysis of personality, with orthogonal super factors of Extraversion - Introversion, Neuroticism and Psychoticism. It includes some Lie scale items also. The Questionnaire is backed by a growing body of evidence bearing on such matters as factor stability, reliability and validity (Upmanyu & Singh,1984; Upmanyu & Upmanyu,2008 ; Upmanyu, Bhardwaj, & Singh,1996).

(d) Torrance Test of Creative Thinking, Figural and Verbal Form A (Torrance,1996)

In the domain of creativity as a field of research, Torrance Test Battery for assessing creative potential of the individual has attained wide popularity. It comprises of 7 verbal, 3 figural tests or better 'activities'. Each sub – test presumably involves different kinds of thinking and contributes something unique to the battery. The test has been extensively used by the researchers and possess adequate psychometric properties (Upmanyu, Bhardwaj, & Singh,1996).

(e) MMPI – Psychopathic deviate subscale(Hathaway & McKinley,1967)

The Minnesota Multiphasic Personality Inventory (MMPI) is designed to provide an objective assessment of some of the major personality characteristics that

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affect personal and social adjustment. The inventory was originally developed 'to array those traits that are commonly characteristics of disabling & psychological abnormality' (Hathaway & Mckinley,1967,p.1) Psychopathic deviate (Pd) scale containing 50 items has been used. The scale measures the personality characteristics of the moral and a social sub-group of person with psychopathic personality disorders termed in this setting as psychopathic deviates (McKinley & Hathaway, 1944). It can be stated that the psychopathic deviate scale of Minnesota Multiphasic personality Inventory has been used with success in clinical settings as well as for research purposes. The psychometric characteristics of these tests are well documented among Indians (Upmanyu & Singh, 1984, Upmanyu and Upmanyu, 1988;Upmanyu, Bhardwaj, & Singh,1996)

Procedure

The tests were administered in random order and in five different sessions. Following standard instructions as proposed by the authors of different tests, Word Association Test comprising of 70 stimulus words of average response entropy value was administered individually, while the remaining 4 tests were administered in a group setting , comprising of 7-10 subjects. Sincere efforts were made to establish rapport with the subjects in order to elicit reliable and authentic information. They were assured that that information to be collected would remain strictly confidential and presented only in a form in which no person could be identified.

Scoring

'Following Brown (1965),Hundal & Upmanyu (1974) and Kuntz (1974), Word Association Test was scored for the following emotional indicators:

- (a) Unique response (UR): Any response made by less than 1%of the subjects was scored as UR.
- (b) Long Reaction time (LRT): A reaction time of 2.6 seconds or longer was

scored as LRT.

(c) Reproduction of Stimulus Before Responding (RSBR): RSBR was scored when the subject repeated the stimulus word before giving the response.

(d) Reproduction Failure: Two indices of reproduction failure were scored. Forgetting (Fg): failure to recall the initial response, and misremembering (W): giving a different response on retest. Fg and W are mutually incompatible and cannot co-occur.

(e) Perseveration: Two indices of perseveration were scored : Stimulus repetition (SR) and response repetition (RR). SR and RR were scored when a subject used a previous stimulus word or response word respectively. However, when different stimulus words which are closely associated with one another appear in the same list, true associations may also occur which fulfill the above definitions of SR and RR. No response given to a particular stimulus word by more than 5% of the subjects was regarded as an instance of SR or RR. SR occurred too infrequently to permit statistical analysis and thus excluded in the main analyses .

These identified emotional indicators were used to obtain three types of scores :(1) scores on single emotional indicator (s); (2) scores on joint occurrence of two emotional indicators (e g UR-LRT) at the same place and for the same stimulus word, and (3) scores on simultaneous occurrence of three emotional indicators (e. g., UR – LRT –RR) at the same place and for the same stimulus word. The combinations which occurred too infrequently to permit statistical analysis were ignored. The relationships of scores on emotional indicators (single versus simultaneous occurrence) with psychopathic measures of anxiety, neuroticism, psychoticism , extraversion, psychopathic deviation and creativity were studied by computing correlations.

Results

Correlational analyses were aimed primarily at examining the relative utility of single word association emotional indicator versus simultaneous occurrence of more than single word association emotional indicators at the same time and for each stimulus word, in order to examine emotional disturbance and creativity. Pearson 's correlation coefficients between measures of word association emotional indicators and emotional disturbance /creativity were computed separately for (1) single emotional indicator , (2) joint occurrence of two word emotional indicators, (3) simultaneous occurrence of three word association emotional indicators.

A large number of bivariate correlations involving 250 subjects were computed separately in the three analyses. The correlations are reported in Tables 1 to 3. Some significant correlations can be expected to have occurred simply by chance, and thus the probability of a Type I error is increased. As a consequence only correlations significant at .01 level were interpreted.

TABLE-1

CORRELATIONS BETWEEN EMOTIONAL INDICATORS AND PSYCHOMETRIC MEASURES OF ANXIETY, PSYCHOTICISM, NEUROTICISM, EXTRAVERSION, PSYCHOPATHIC DEVIATION AND CREATIVITY
(N:250)

Variables	RSBR	UR	LRT	RR	W	Fg.
p-scale	.02	.26	.12	.18	.18	-.09
E-Scale	.06	.00	-.03	-.06	.14	-.08
N-Scale	-.10	.12	-.07	.07	-.04	-.03
L-Scale	.06	-.14	.09	-.16	-.10	-.04
Q ₃ (-)	-.04	.12	.01	.05	-.05	-.06
C(-)	.02	.07	.03	-.08	.06	-.04
L	.23	.02	.32	-.07	-.04	.14
O	.07	-.06	-.03	.01	.12	-.09
Q ₄	-.01	.08	-.06	.00	.13	.24
Anxiety	.01	.16	-.03	-.03	.16	.10
Pd-scale	.09	.14	.16	.16	.15	.07
F-orig.	-.09	.08	-.12	.01	.03	-.14
F-elab.	-.03	.03	-.09	-.02	.07	-.17
F-flue.	-.09	-.11	-.12	-.01	-.09	-.09
F-flex.	-.12	.10	-.12	-.06	-.10	-.10
V-orig.	-.10	.23	-.07	-.07	-.07	-.06
V-flue.	-.09	.18	-.04	-.01	-.08	-.06
V-flex.	-.04	-.19	-.09	-.05	-.10	-.10

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TABLE-2
CORRELATIONS OF JOINT OCCURRENCE OF TWO EMOTIONAL INDICA-
TORS WITH PSYCHOMETRIC
MEASURES OF ANXIETY, PSYCHOTICISM, NEUROTICISM, EXTRAVERSION,
PSYCHOPATHIC DEVIATION AND CREATIVITY
(N =250)

Measures	RSBR- UR	RSBR- LRT	RSBR- RR	RSBR-W	RSBR-Fg	UR-LRT	UR-RR	UR-W	UR-Fg	LRT- RR	LRT- W	LRT- Fg	RR- W
p-scale	-.03	.05	.04	.18	.07	.16	.38	.41	.20	.26	.29	.09	.17
E-Scale	.03	.04	.00	.14	-.01	-.02	-.05	.00	.03	-.11	.10	.06	.00
N-Scale	-.11	-.10	.01	-.04	-.05	-.06	.02	.02	.12	.04	-.07	-.04	.04
L-Scale	-.06	.04	-.10	.06	-.01	-.07	-.13	-.09	-.12	-.13	-.09	.05	-.16
Q ₃ (-)	.11	.00	.00	-.05	-.06	.06	.01	.00	.10	.05	-.05	-.05	-.01
C(-)	-.03	.02	.03	.03	-.04	-.01	-.08	-.07	-.03	-.05	-.04	-.03	-.08
L	.05	.46	-.05	.10	.14	-.03	-.01	.01	-.08	-.11	-.08	.26	.11
O	.03	.07	.08	.03	-.01	-.08	.04	.09	-.12	.00	.10	-.11	.06
Q ₄	-.03	-.01	.05	.10	.18	-.06	.04	.05	.16	.02	-.10	.06	.02
Anxiety	.06	.01	.04	.12	.07	.09	.03	.10	.13	-.02	.15	.11	.10
Pd-scale	.08	.13	.14	.14	.08	.14	.24	.30	.07	.16	.28	.08	.08
F-orig.	-.06	-.11	-.01	-.11	-.10	-.03	.08	.04	-.12	-.07	-.10	-.12	-.10
F-elab.	.03	.00	-.06	.00	-.12	-.07	.08	.04	-.14	-.07	.00	-.08	.04
F-flue.	-.08	-.09	-.05	-.10	-.10	-.09	-.05	-.01	-.09	-.14	-.06	-.10	-.04
F-flex.	.13	-.10	-.10	-.12	-.14	.09	.04	-.03	-.05	-.10	-.10	-.10	-.03
V-orig.	.16	-.06	-.06	-.02	-.07	.12	.12	.14	.12	-.06	-.11	-.10	-.12
V-flue.	.09	-.12	-.05	-.03	-.09	.12	.18	.12	.11	-.06	-.14	-.04	-.09
V-flex.	.08	-.10	-.08	-.07	-.09	.09	.08	.12	.10	-.12	-.11	-.05	-.14

TABLE 3
CORRELATIONS OF JOINT OCCURRENCE OF THREE EMOTIONAL
INDICATORS WITH PSYCHOMETRIC MEASURES OF ANXIETY,
PSYCHOTICISM, NEUROTICISM, EXTRAVERSION, PSYCHOPATHIC
DEVIATION AND CREATIVITY (N:250)

Measures	RSBR LRT UR	RSBR LRT RR	RSBR LRT W	RSBR LRT Fg	UR LRT RR	UR LRT W	UR LRT Fg
p-scale	.14	.10	.29	.08	.45	.42	.08
E-Scale	.02	-.04	.13	-.03	-.10	.07	-.04
N-Scale	-.08	.00	-.04	-.03	.04	.04	-.08
L-Scale	.07	-.04	.09	.07	-.10	-.04	.02
Q ₁ (-)	.07	-.01	.03	-.08	.04	.01	-.09
C(-)	-.02	.04	.03	-.02	-.06	-.03	-.04
L	.25	.32	.29	.31	.20	.18	.26
O	-.03	.05	.05	-.01	-.04	.10	-.07
Q ₄	-.03	.02	.10	.04	-.02	.07	.14
Anxiety	.05	.02	.11	.08	.08	.11	.10
Pd-scale	.14	.17	.15	.07	.31	.42	.09
F-orig.	-.04	-.08	-.14	.12	.05	-.02	-.08
F-elab.	-.01	-.04	.00	-.14	-.01	.01	-.07
F-flue.	-.09	-.10	-.12	-.12	-.06	.08	-.10
F-flex.	-.13	-.12	-.11	-.10	-.06	-.11	-.11
V-orig.	.13	-.10	-.05	-.10	.06	-.07	.15
V-flue.	.11	-.10	-.01	-.11	.08	.08	.05
V-flex.	.11	-.11	-.10	-.10	.11	.01	.14

Table 1 shows that LRT and RSBR measures were positively correlated to Factor L (suspiciousness or paranoid insecurity), one of the five components of second – order anxiety factor ($r = 0.32, df=248, p<0.01$, $r = 0.23, df=248, p<0.01$). Extremely unique word association (UR) measures was related to psychoticism ($r=0.26, df=248, p<0.01$) as assessed by the EPQ. Remarkably, UR measures showed negligible relationship with figural indices of creativity. RR and W measures were found also to be positively associated with psychoticism respectively; ($r = 0.18, df=248, p<0.01$) and ($r=0.18, df=248, p<0.01$). Finally, RR and psychopathic deviation scores were also significantly correlated ($r = 0.18, df=248, p<0.01$). Despite these significant and interpret-able correlations, most of the personality variables only had low to moderate association with word association emotional indicators.

Joint Occurrence of Two Emotional Indicators

Although several correlations emerged to be significant, only some correlations showing associations between the Joint occurrence of two word association emotional indicators and psychiatric disturbance measures showed marked improvement over the variate correlations when emotional indicators in these combinations were treated singly. Psychoticism showed positive associations with several combinations comprising of UR-RR, UR – W, LRT-W and LRT –RR ($r=.38, .41, .29$ and $.26$, for p dimension versus UR-RR, UR-W, LRT-W and LRT-RR, respectively ; $n=250, p<0.01$). These correlations were more marked than the correlations of psychoticism with single occurrence of these word association emotional indicators, UR ($r=.26$), RR($r=.18$), W ($r=.18$) and LRT ($r=.12$). The relationship of psychoticism with some combinations of RSBR-W, UR-Fg, RR-W and UR-LRT, though significant, was not different from the relationship of P with these emotional indicators occurring singly.

The relationship of psychopathic deviation with several combinations comprising of UR-W($r=.30$), LRT –W ($r=.28$) and UR-RR ($r=.24$) also showed improvement over the correlations involving psychopathic deviation and these emo-

tional indicators occurring singly ($r=.14, .15, .16$ and $.16$, for psychopathic deviation versus UR, W, LRT and RR, respectively). Finally, the joint occurrence of LRT and RSBR was found to be related to factor L (Suspiciousness : $r = .46$). LRT and RSBR measures when treated separately correlated $.32$ and $.23$, respectively with Factor L. Interestingly, the joint occurrence of word association emotional indicators showed negligible relationships with creativity measures.

Simultaneous Occurrence of Three Emotional Indicators

Only four correlations emerged to be relevant from the viewpoint of the focal theme of this study. UR-LRT –RR simultaneous occurrence was found to be positively associated with both psychoticism and psychopathic deviation ($r=.45$ and $.31$, for UR-LRT –RR measures versus psychoticism and psychopathic deviation, respectively). Further, UR-LRT-W simultaneous occurrence was found also to be positively related to psychoticism ($r=.42$). These correlations showed improvement over the correlations involving single word association emotional indicator as well as joint occurrence of two word association emotional indicators.

Discussion

For the most part previous research has focused on the study of the diagnostic potency of single emotional indicator at a time with a consequent neglect of studying joint occurrence of word association emotional indicators as criteria for emotional disturbance. In psychoanalytic literature, the notion is sometimes expressed or implied that when a stimulus word evokes a single complex sign, no particular significance is to be attached to it, but if two or more signs appear at the same time, the combination at once becomes decidedly significant (Dooley, 1916). A major theme influencing the organization of the current research was the failure of the earlier researches to examine the utility of simultaneous occurrence of two and three word association emotional indicators in

Word Association Test performance for studying pathological characteristics and creativity.

The results generally support our prediction that simultaneous occurrence of two and three emotional indicators were more revealing about some dimensions of psychopathology. The strongest effects on word association test performance were revealed for the dimensions of psychoticism as assessed by the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975) and psychopathic deviation as assessed by MMPI-Psychopathic deviate subscale. The simultaneous occurrence of UR-LRT-W has emerged to be more valid criteria for both psychosis proneness and psychopathic deviation.

There are basically three ways in which these results could be viewed. First, the findings could be said to provide a base for exploration that psychoticism and psychopathic deviation have a common denominator; second, if it is considered that the same clustering of emotional indicators has emerged to be relevant for psychosis proneness as well as psychopathic deviation, the simultaneous occurrence of these emotional indicators (UR-LRT-RR and UR-LRT-W) may tap a common factor associated with the willingness to be unconventional or engage in mildly antisocial behaviour. With respect to the substantial contribution of the psychoticism factor of the EPQ and Psychopathic Deviate subscale of the MMPI, it can be inferred that the P scale of the EPQ tapped some features of social anhedonia (e.g., aloofness, social deviance, unconventionality, and mild anti-social behavior. This finding seems to provide support for Claridge's (1981) and Raine's (1986) suggestion of a link between psychoticism, mild anti social behavior, and lack of conformity/unconventionality rather than the more specific clinical entity of psychopathic behavior. Although the nature of the P scale on the EPQ has been questioned, these findings may help clarify the nature of Eysenck's psychoticism dimension (Eysenck & Eysenck, 1975, p.5).

The explanation would find sufficient support in the negative correlation of L-scale with psychoticism as well as psychopathic deviation ; third finding could be said to provide evidence validating the utility of simultaneous occurrence of these word association emotional indicators for diagnosing individuals who are “at risk” with respect to a variety of adjustment problems later in life. Further, there is a strong justification for the clinician to use the joint occurrence of these word association emotional indicators long reaction time (LRT) and repetition of stimulus before responding (RSBR) as indicative of suspicious-ness. Hundal & Upmanyu (1982) also found similar results when LRT and RSBR were treated independently. Further evidence from studies with other word lists and giving due emphasis to stimulus characteristics should be made to generalize about the validity of specific clustering of word association emotional indicators.

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EFFECT OF COMPUTER ASSISTED INSTRUCTION ON ACHIEVEMENT IN ENGLISH IN RELATION TO INTELLIGENCE

*** Ram Mehar**

Abstract

The purpose of the study was to investigate effect of computer assisted instruction on achievement in English in relation to intelligence. The sample was drawn from VIIth class students (N=100) from two different schools of Chandigarh (U.T.) affiliated to CBSE. Instructional material based on computer assisted instruction were prepared and implemented to the experimental group after pre-testing. Intelligence test was also administered and gain scores were computed after post- test for all the students of intelligence levels. A 2 x 2 two way Analysis of variance was used to arrive at the following conclusions: (i) Computer assisted instruction was found to attain significantly higher achievement scores as compared to control group (ii) Performance of students with intelligence groups through computer assisted instruction was found significant, (iii) No interaction effect was found to exist between the two variables.

Education basically aims at preservation and transfer of culture of the respective communities. The traditional educational methods could not keep pace with changes in the needs of the society. In recent times the unprecedented expansion in the area of science and technology has brought in not only knowledge explosion but technological upheaval as well. Educational technology especially computers and computer related peripherals have grown tremendously and permeated the formal system of education.

One of the technological advancements in the field of education relates to the use of computers for instructional purposes. It has revolutionised the whole spectrum of education. It has better flexibility and more versatility than any of the teaching machine. It can deal the problem of quality in education more effectively. According to Maggery (1989) the challenges and problems faced by the modern educational system can be removed with the help of computers. If we allow the students to learn one thing at a time and then another until they can get their feet under them, may be we break the cycle of failure.

Computer technology is highly useful in presenting learning material in or-

ganized and effective manner. It is possible for nearly all students to master given set of objectives in reasonable time i.e. the opportunity to learner is provided along with appropriate material and instructions.

Computer assisted instruction is an innovation in the field of teaching learning process. Computer assisted instruction means instruction given to the learner with the help of computer. Computer assisted instruction is a natural outgrowth of the application of the principles of programmed learning in the realm of instruction. The main objective of programmed learning is to provide individualized instruction to meet the special needs of individual learner. To accomplish this objective, there is a need of an efficient and flexible device that can store a massive amount of organised information and use a selected portion to meet the needs of individual learners. Computer assisted instruction caters needs of the child because it can store, retrieve & act on whatever data the learner feeds into it. Thus the main objective of Computer assisted instruction is to provide the needed flexibility for individualising the educational process. It meets the specific needs of the student in a way that it is almost impossible to do in a face-to face student-teacher relationship.

Computer assisted instruction as use of a computer assists in the presentation of instructional materials to a student to monitor learning progress, or to select additional instructional material in accordance with the needs of individual learner. In Computer assisted instruction, the students participate with the computer system on a direct basis and the instructional material is stored in the computer system. The Computer assisted instruction installation usually consists of individual learning booths each with a console. Every student sits in front of the console with a screen showing information. A complete learning package suiting to learner's needs is presented sequentially. A learner can make progress at his own pace and immediate feedback is provided to him. Computer assisted instruction not only uses programmed instruction as its basis, but it also uses electronic data processing, data communication, concepts of audio visual and media theory.

The concept of academic achievement refers to the achievement by individuals of objectives related to various types of knowledge and skills. These objectives are socially established based on the age, prior learning and capacity of individuals with regard to education, socialization and qualification. According to Crow and Crow(1907) academic achievement is the extent to which learner is profiting from instruction in a given area of learning and academic achievement of pupil is the knowledge attained and skill developed by him in the subject in

which he is imparted training in school and subsequent success in life.

The word intelligence comes from the Latin word 'intelligence' which means to understand. Intelligence is the ability to learn quickly and to retain, for a long time. It is the ability to adjust to new situations and to judge well, to comprehend well and to reason well. It is the general mental capacity or mental energy available within an individual at a particular time in a particular situation. Thus intelligence includes the abilities to develop solutions to problems, which requires understanding and comprehension. It is an umbrella term used to describe a property of mind that encompasses many related abilities such as capacities to reason, to plan, to solve problems, to think abstractly, to comprehend ideas, to use language and to learn.

Wagnon (1937) holds the view that Intelligence is the capacity to learn and adjust to relatively new and changing situations. Stern (1927) defines intelligence as an individual is intelligent in proportion as he is able to carry on abstract thinking. According to some others intelligence refers to a biological mechanism by which the effects of a complexity of stimuli are brought together and given a somewhat unified effect in behaviour.

NEED AND SIGNIFICANCE OF THE STUDY

Computer assisted instructions can overcome barriers of time and place. If a school has a satellite system of computer laboratories, students can study English at various places on campus at any time. If the school has a network of computer laboratories, students can use the same materials wherever they are working. Students can study at home if they have a computer to connect to the school computer. Computers can be connected among schools and teachers can use them to share materials and information. Teachers can get materials from commercial companies, networks or databases, even from foreign countries.

Computer assisted instruction is good for motivating students to study English. Students are anxious to use computers. Many students are tired of traditional English classes and are interested in a new style of learning. When they use a computer, feel like they can master English. They can study English with their own learning style. They feel like they are learning something. Students think the materials are new and fresh if they are presented on computers. They are interested in even routine such as learning to type. They can clearly see the results of their work.

Thus, the study is being done as the investigator feels that schools

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should develop a vision of how technology can improve teaching learning process and make pupils more informative and develop various skills and abilities. Therefore, the investigator made an attempt to enquire into the effect of computer assisted Instruction on achievement in English in relation to intelligence.

Delimitations

- (i) The study was delimited on VIIth class students from two schools of Chandigarh only.
- (ii) The investigation of computer assisted instruction was conducted in the subject of English grammar only.
- Objectives
 1. To compare the performance of groups taught through computer assisted instruction and conventional method of teaching.
 2. To study the interaction effect between computer assisted instruction of teaching and intelligence level.
 3. To study the relationship between computer assisted instruction of teach-ing and intelligence level.

• **Hypotheses**

H₁O The performance on English grammar of computer assisted instruction group will be higher than the conventional group.

H₂O The performance of high intelligence group will be higher than the low intelligence group.

H₃O The performance through computer assisted instruction of teaching do not interact with intelligence group.

METHODOLOGY OF THE STUDY

It is necessary to adopt a systematic procedure to collect the necessary data which helps to test the hypothesis of the study under investigation. Various steps of research methodology to be followed in the present study are as follows: Sample

SAMPLE:

The present study was conducted on a sample of 100 students of VIIth class taken from two schools of Chandigarh. The study was proposed to be conducted on two intact groups, one as experimental group and another as conventional group. The school-wise break up of the sample is given below in table 1.

Table 1 : School-wise break up of the sample

S.No.	Name of the school	No. of students selected		
		Group I	Group II	Total
1	A.K.S.I.P.School,41-B, Chandigarh	25	25	50
2	Shivalik Public School, 41 Chandigarh.	25	25	50
	Total	50	50	100

Design

For the purpose of the present investigation a pre- test and post-test factorial design was employed. In order to analyse the data a 2x2 analysis of variance was used for the two independent variables viz. instructional treatment and intelligence level. The variable of teaching strategy was studied at two levels, namely computer assisted instruction and conventional method of teaching. The variable of intelligence groups was studied at two levels, namely high and low intelligence level. The main dependent variable was performance gain which was calculated as the difference in post- test and pre-test scores for the subject.

Tools used

The following tools were used for the collection of data:

- (i) Five lessons in English grammar based on computer assisted instruction of teaching prepared by the investigator.
- (ii) Achievement test was prepared by the investigator.
- (iii) General mental ability test by Jalota (1972) to measure the intelligence level of the students.

Procedure

After the selection of the sample and allocation of students to the two instructional strategies, the experiment was conducted in four phases:

Firstly, the intelligence test was administrated in each school, in order to identify for measuring intelligence level of the students.

Secondly, a pre-test was administered to the students of both the treatment and control group. The answer-sheets were scored to obtain information regarding the previous knowledge of the students.

Thirdly, one group was taught through computer assisted instruction and another group was taught through conventional method of teaching by the investigator.

Fourthly, after the completion of the course, the post- test was administered to the students of both the groups. The answer-sheets were scored with the help of scoring key. Time limit for the test was one hour.

ANALYSIS AND INTERPRETATION OF RESULTS

Analysis of Descriptive Statistics

The analyses of the obtained data were done by statistics such as mean and standard deviation was used to determine the nature of the distribution of the scores. The data were analysed with the help of two way analysis of variance was used to test the hypotheses related to strategies of teaching and intelligence level. The mean and standard deviation of different sub groups have been presented in table 2.

Table 2. Means and S.D's of achievement scores for the different sub groups

Intelligence groups	Teaching					
	CAI		Conventional Method		Total	
	Mean	SD	Mean	SD	Mean	SD
High Intelligence	10.69	1.32	6.85	1.35	8.76	2.34
Low Intelligence	7.77	5.18	3	1.04	5.38	4.48
Total	9.23	4.05	4.92	2.27		

It may be observed from the above table 2 that the mean scores of computer assisted instruction ($M=9.23$) was higher than the conventional method of teaching ($M=4.92$). This shows that computer assisted instruction was more effective than the conventional method of teaching. This was further confirmed through the means of the two intelligence groups that is high intelligence group ($M=8.76$) was higher than the low intelligence group ($M=5.38$). It is concluded that the gain mean with computer assisted instruction was more for high intelligence group than for low intelligence group. This difference was also found in respect of the two intelligence groups taught through conventional method of teaching.

Analysis of Variance on Achievement Scores

The mean of different sub-groups, sum of squares, degree of freedom, mean sum of squares and the F - ratio have been presented in table 3.

Table 3: Summary of Analysis of Variance on Achievement scores.

Source of Variance	Sum of Squares	df	Mean sum of Squares	F- ratio
Computers assisted instruction (A)	241.23	1	241.23	28.25**
Intelligence level (B)	148.19	1	148.19	17.44**
Interaction (Ax B)	2.76	1	2.76	0.32
Error	409.78	48	8.54	

** Significant at 0.01 level of significance

(Critical Value 4.04 at 0.05 and 7.19 at 0.01 level)

MAIN EFFECTS

Computer Assisted Instruction (A)

It may be observed from the above table 3 that the F-ratio for difference in mean gain scores of computer assisted instruction and conventional teaching group is 28.25, which in comparison to the table value is found to be significant at the 0.01 level of significance. It shows that the groups were different beyond the contribution of chance. The hypothesis H_{1O} : The performance on English gram

mar of computer assisted instruction group will be higher than the conventional group, is not rejected at 0.01 level of significance. The result indicates that computer assisted instruction group was higher in performance than the con-ventional teaching group.

• ***Intelligence Groups (B)***

It may be seen from the above table 3 that the F-ratio for difference of means of the two groups on intelligence level is 17.44, which in comparison to the table value is found to be significant at the 0.01 level of significance. The result indicates that two intelligence groups are different in respect of achievement scores. Hence, hypothesis H₂O: The Performance of high intelligence group will be higher than the low intelligence group, is not rejected at 0.01 level of significance. This was further confirmed through the means of the high intelligence group was higher than the low intelligence group.

• **Interaction Effect (A X B)**

It may be observed from the above table 3 that the F- ratio for the interaction between treatment group and intelligence group is 0.32, which in comparison to the table value is not found to be significant even at the 0.05 level of significance. It indicates that the two variables do not interact with each other. Thus, null hypothesis H₃O: The performance through computer assisted instruction of teaching do not interact with intelligence group, is not rejected at 0.01 level of significance. So, computer assisted instruction and conventional teaching do not equal levels of achievement for high and low intelligence group of the students.

DISCUSSION

The present study revealed that the performance of computer assisted instruction of teaching on English grammar were found more effective than the conventional method of teaching. The results are supported by the finding of Bennett (1999), Singh (2001), Chang (2002), Lonigan (2003), Tabassum (2004), Sharma (2006), Kochhar (2007), Jindal (2008), Cohen & Block (2009), Barot (2010) found that computer assisted instruction proved significantly better than the traditional teaching of different subjects .

The performance of students in English grammar through computer as-

sistant instruction has shown significantly difference for high and low intelligence students. The conclusion that the computer assisted instruction of the two intelligence groups was found significant the results are supported by the finding of Dutt (1989), Mehra & Mondal (2005), Aruna and Usha (2006), Gurubasappa (2009), Manas (2009).

The performance of computer assisted instruction was not found interacting with each other at different levels of intelligence. It indicates that performance through computer assisted instruction of teaching was different for intelligence levels.

However, the findings suggest that computer assisted instruction of teaching can prove to be a better strategy for English grammar at secondary school stage.

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SUPERNATURAL ELEMENTS AS CONTEXT FOR DELIBERATIONS ON CULTURE AND COGNITION

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Abstract:

A unique achievement of human cognition is the invention of supernatural elements having its origin in the shamanistic ceremonies in caves some 30,000 years ago. These elements reside inside and outside the individual, and thus exert two-way control on thinking, feeling and behavior. The paper introduces ten contemporary hypotheses about supernatural elements and while deliberating upon them. In search for the sacred, the paper articulates new paradigm—mind-brain-mind—for psychology. The last section summarizes author's work in context of the religious and cultural ethos prevailing in Himachal Pradesh. Our naturalistic observations on the institution of deity provide evidence for linkages between supernatural elements and coherence in social structure in villages. Case studies at various group levels highlight the role of supernatural elements in the resolution of social conflicts. The human-animal interaction approach, particularly the study of transhumance, introduces one to the complex dynamics of supernatural elements across the verticality of the Himalayas from the Shivaliks to the Tibetan plateau. Using quasi-experimental designs we have been exploring the explicit and implicit memories to study the role of supernatural elements in positive and negative aspects of human well-being.

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*A revised version of invited presentation at the National Symposium on **Culture and Cognition: A developmental perspective**, from January 23-25, 2010, organized by Department of Psychology, University of Delhi, Delhi-110007.*

The phenomena which are subject matter of psychology range from the end of continuum where variables are measurable to the other end having absolute subjectivity. However, with certain assumptions it is possible to quantify the variables lying on the subjectivity end, for example, measuring social bias in milliseconds¹. Although 'Freud-like'craft² of psychology has become 'out of fashion', the movement towards objective science continues to be a dilemma. For it is true that towards the subjective end of the continuum lie numerous phenomena which are at the core of the human life. We love our home, and feel miserable when deprived of it, but it is not easy to measure the cost of this 'love'. Even the most dignified spokesperson on 'love', Sigmund Freud, fumbled in exploring its content in the cognition of his subjects (Kandel, 1999). On a similar issue, Victor Frankl has made a painful remark, "Thank heaven, Freud was spared knowing the concentration camps from the inside. His subjects lay on a couch designed in the plush style of Victorian culture, not in the filth of Auschwitz." (Frankl, 1959/2008; p. 154)

On the one hand psychologists need to be cautious about arbitrary metrics in the discipline (Blanton, & Jaccard, 2009), but on the other hand they risk professional credibility by denouncing first person approaches. These qualitative methods seem appropriate at the exploratory stage for the study of mental phenomena, which, in fact, distinguish humans from the other creatures. One such phenomenon is the invention of supernatural entities by the human mind, which enriches our cultural heritage; moreover it is responsible for the rise and fall of civilizations. Although the richness of this remarkable feat lies in the epics, temples and rituals, through cognitive representation of supernatural elements people identify with them, and transmit these scripts from one generation to the other with high self-esteem. Therefore it is reasonable to explore the significance of attachment to one's home or the beloved deity, irrespective of the magnitude of these entities, for his/her well-being. It is true that hungry belly needs food to satisfy a primary physiological need, but many people voluntarily reject food or sacrifice themselves to propitiate supernatural agents. Therefore it is not difficult to understand why human civilizations cherish these self-sacrificial acts, rather scavenging to satisfy one's basic need. To be in love is one

thing, but to sacrifice oneself for the sake of loved one makes history.

The major issue in this paper is to understand the role of supernatural agents in enhancing human well-being. We hypothesize that supernatural elements are creation of human cognition, and in this way they have material basis. The radical hypothesis, which prevails in folk mind, distinctly finds expression in words of the 14th Dalai Lama *that all mental processes are necessarily physical processes is an open question* (Davidson, 2006). Much earlier, in the second decade of twentieth century, while realizing the importance of evolution in understanding life, Sri Aurobindo (2006) saw divine consciousness behind all living and non-living processes. The issue has importance for us since in context of supernatural elements there is postulation of afterlife in almost all cultures of the world. This extension of mind, beyond body, is supposed to have a common neuro-functional substrate which “led human beings at different times and in widely varying cultural contexts, to postulate the existence of a soul and to begin developing a theory of mind.” (Metzinger, 2005).

In the remaining part of the paper there are two sections. The first section enumerates various hypotheses about supernatural elements. The second section provides a holistic paradigm for psychology, and then deliberates on some approaches to explore some hypotheses about supernatural elements.

Unique cognitive invention

A unique achievement of human cognition is the invention of supernatural elements having its origin in the shamanistic ceremonies in caves some 30,000 years ago (Armstrong, 2009; Fisher, 1982). But the process did not stop there. The supernatural elements reside inside and outside the individual, and thus exert two-way control on thinking, feeling and behavior to mould one's affectionate and sensual relationships (Faw, 2006; Jones, 2009). We enumerate here ten contemporary hypotheses to answer the question, why do people believe in supernatural elements?

The new millennium began with the recognition of the mutuality of mind and body

(brain), fossilizing Cartesian duality as an historical fact. After an exhaustive review of various models of mental health developed over the last thirty years, Vaillant (2003) concludes “*mental health must always be broadly defined in terms that are culturally sensitive and inclusive.*” In the new paradigm, as noted by Ray (2004), an investigator is trying to explain how belief becomes biology.

Although it has been shown by experimental psychologists that mediums do not communicate with the deceased (O’Keeffe, & Wiserman, 2005) and there is no ghostly haunting (Wiserman, Watt, Stevens, Greening, & O’Keeffe. 2003), people all over the world have such beliefs and are affected by them. The cultural variability of supernatural agents exposes psychologists to interdisciplinary areas of vast magnitude and challenges his/her professional competence. The inequality among traditional healers in use of supernatural agents is another significant issue. The oracles of goddess Yellamma in Deccan Plateau face intimidation for ecstatic religiosity, but in the same region, priests of gods of greater tradition enjoy respect (Ramberg, 2009). Those who work in real-life situation advocate for ways of cooperation between traditional healers and mental health professionals, whether they are in Africa (Abbo et al. 2009) or in China (Xu, 2009). The phenomena associated with supernatural agents have significance for understanding the complexity of mind associated to well-being of the individual (Metzinger, 2005; Jacobson, 2009). There is evidence that religious conviction mediates in reduction of uncertainty (Inzlicht, McGregor, Hirsh, & Nash, 2009). These belief systems leave impressions on the brain, accommodate new experiences, and help in their interpretation.

All living beings are programmed for self-preservation, but it is human species alone which surpasses all other creatures in adaptability and intelligence. Perhaps due to these capabilities humans have awareness of inevitability of death. This awareness has potential for extraordinary terror, which is managed by increasing self-esteem and belief in cultural world-views where supernatural elements pay significant role (Pyszczynski, Greenberg, & Solomon, 2007). These elements have importance in the preservation of environment (Dickinson, 2009; Kazdin, 2009). Evolutionary models have been conceived to study the role of

supernatural elements in development of cohesiveness in groups (Shariff, Cohen, & Norenzayan, 2009). The selfish free-riders are supposed to outnumber altruists in a group, as a result, the group of cooperative individuals becomes extinct. An alternative, however, is to punish the free-riders (or defectors or cheaters). The supernatural agents are assumed to wield such powers (Johnson, & Bering, 2006; Johnson, & Kruger 2004). A novel suggestion is that human cognitive processes have been selected to learn certain displays that have significance in cultural evolution (Henrich, 2009). They are known as credibility enhancing displays (CREDs).

About a decade ago some investigators hypothesized that God may serve as an attachment figure (for the believers) and all the four criteria of attachment would also apply to this relationship. These criteria are: seeking and maintaining proximity to God, seeing God as a haven of safety, seeing God as a secure base, and feeling of separation and loss when denied access to God (Cicirelli, 2004). The application of attachment theory in understanding an individual's relationship with an '*anthropomorphically shaped deity*' (Granquist, Ljungdahl, & Dickei, 2007), or cognitively invented supernatural entities, has pioneered a new dialogue between cognition and culture. Culture is a fertile medium to generate immense variety of supernatural entities. The cognitive image of God or deity fits to Bowlby's definition of attachment object as one that is 'stronger and/or wiser'. This has significance in understanding the development of personality and cognition of individual in a particular culture.

The explanations of supernatural elements broadly fall under two categories—*proximate* and *ultimate* (Table 1). Although the involvement of mind-brain continuum varies considerably in these explanations, the conceptualization of supernatural entities as elements of cognition provides a unifying background.

Table-1
Contemporary explanations of belief in supernatural agents

S. No.	HYPOTHESES	Proximate causation	Ultimate causation	Neural mechanism	Theoretical Variable*	Sub-area	CC-interaction**
1	Well-being enhancer (Abbo et al. 2009; Armstrong, 2009; Chattopadhyay, 2009; Metzinger, 2005; Jacobson, 2009; Ramberg, 2009; WHO, 2001; Xu, 2009)	Yes	Yes	Yes	Many	Mental health	Yes
2	Compensatory mechanism (Kay, Gaucher, Napier, Callan, & Laurin, 2008)	Yes	No	No	One	Social psychology	?
3	Uncertainty reduction (Hermans, & Dimaggio, 2007; Inzief, McGregor, Hirsh, & Nash, 2009)	Yes	No	Yes	One	Social psychology	?
4	Terror management (Dickinson, 2009; Pyszczynski, Greenberg, & Solomon, 2007)	Yes	No	?	One	Social psychology	Yes
5	Dissonance reduction (Burris, Harmon-Jones, & Tarpley, 1997)	Yes	Yes	Yes	One	Social psychology	?
6	Sustainability facilitator (Goldsmith, 2001; Kazdin, 2009; Pirta, 2007; Rappaport, 1979; Weir, 2006)	Yes	Yes	No	Many	Environment	Yes
7	Perceived control (Crook, 1995; Gazzaniga, 1994)	No	Yes	Yes	One	Evolutionary psychology	Yes
8	Moralizing agent (Johnson, & Bering, 2006; Johnson & Kruger, 2004; Shariff, Cohen, & Norenzayan, 2009)	No	Yes	Yes	One	Evolutionary psychology	Yes
9	Credibility enhancing (Henrich, 2009)	No	Yes	Yes	One	Evolutionary psychology	Yes
10	Attachment objects (Ainsworth, & Bowlby, 1991; Bowlby, 1977; Cicirelli, 2004; Granquist, Ljungdahl, & Dickei, 2007)	No	Yes	Yes	One	Ethology	Yes

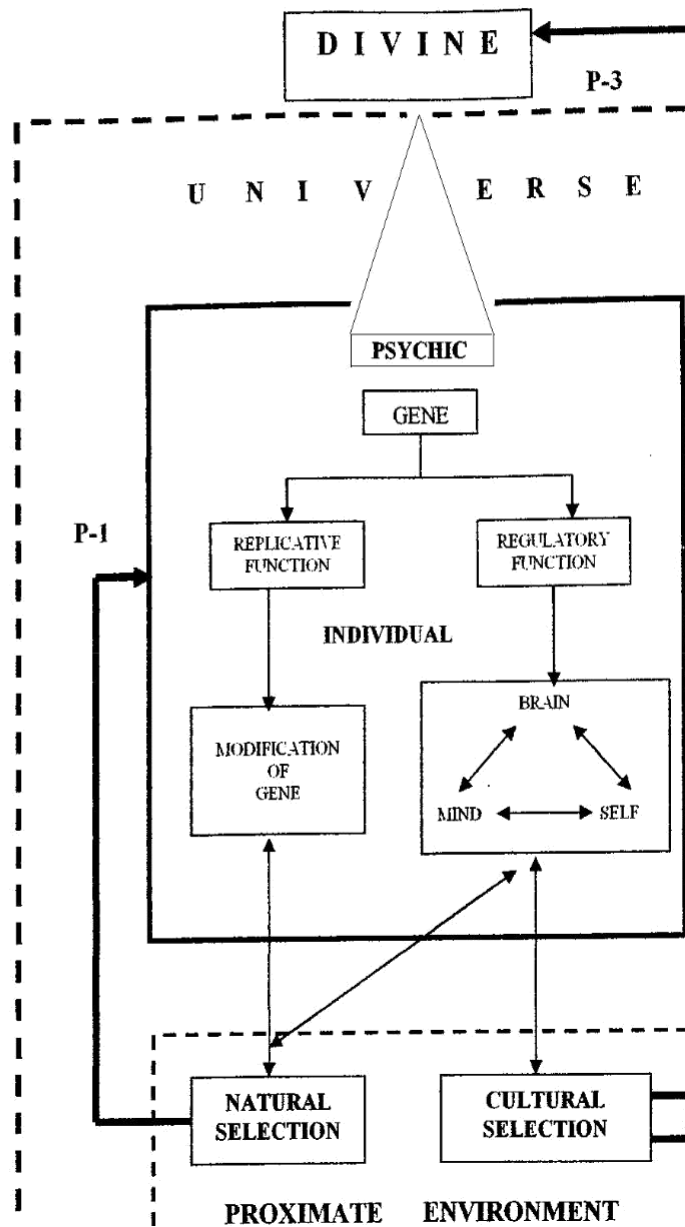


Figure 1. The three pathways of human evolution

From an evolutionary perspective, it is important to explore the temporal and spatial origins of the remnants of the rituals of supernatural elements and hypothesize its functional significance, for it was then selected as a genetic predisposition. One such hypothesis is the role of belief in supernatural elements in enhancement of in-group co-operation or pro-social behavior in non-kin (where kin-selection and reciprocal altruism are not applicable). Its propagation among members can then occur through cultural evolution.

Context for deliberations

Our aim is to open dialogues between various levels of explanations about super-natural elements that have theoretical and applied significance (Parsons, 2010; Spiro, 2005). Astonishingly, the medical scientists all over the world are reporting encounters of patients about transpersonal experiences under miserable states (Carter, Presti, Callistemon, Ungerer, Davidson et al. 2003; Deeley, 2004; Hankey, 2006; Hebert, 2001; Liu, & Pettigrew, 2005; Moss, 2001). Psychologists in India are showing signs of interest in this area, for example, Dalal, & Misra (2010) articulates these attempts as Indian psychology. Moreover, this indigenous search is largely about the supernatural elements that are part of greater tradition in India, the little tradition is seen having no value in spiritual pursuits.

The focus of our concern is deities of little tradition residing in the psyche of rural masses in India. Two volumes of Crooke (1896/1968a; b) provide an exhaustive glossary of supernatural elements that has relevance for the communities in northern region of India. On the need to explore little tradition, more than a century ago Crooke wrote, "*I believe that the more we explore these popular superstitions and usages, the nearer are we likely to attain to the discovery of the basis on which Hinduism has been founded.*" Crooke (Preface to the First Edition, page vi; 1896/1968a)

Here I shall present a paradigm for psychology that is holistic, and may have fascination for curious people with allied involvement.

A. Search for sacred: a new paradigm in psychology

A comment in Preface of the *Life of Sri Ramakrishna* is insightful in exploring supernatural elements. “*Science, especially psychology, is as yet in its infancy, and it will be hampered in its progress if facts are withheld, simply because in its groupings it is not able to account for them. Instead of shutting his eyes to them, the seeker after truth will do well to work upon these data for new hypotheses of spiritual phenomena.*” (Nikhilananda, 1924/2008; p. iv)

Interdisciplinary scenarios: It is strange to find a person having “an interest on religious people spanning for over 20 years” to understand the “inalienable belief in God” while remaining himself aloof from religion, this man was Ravinder Lal Kapur (Wig, 2007). In ‘The Great Universe of Kota’, Carstairs and Kapur (1976) observed that we have to learn from the People’s Republic of China where the village healers were assimilated with mental health programs for delivering help at grass-roots level. This classic work concludes that in India, on the one hand, the villagers were loyal to their traditional healers, but at the same time, they were not averse to new remedies of mental health (Kapur, 1975). During the same period, Kakar made radical departure from the prevailing ethos of psychology when he embarked upon a project to explore the life and ways of shamans and mystics in the vast cultural canvas of India (Kakar, 1982). Undoubtedly, Kakar’s analysis enriches the core of psychoanalysis from the experiences with a culture that was in many ways distinct from the European countries where this school flourished. Yet it also repudiates the universal propositions of Freud and others, a task further taken up by several others in India, for example, Davar and Bhatt (1995).

However, one finds that some questions of fundamental relevance for psychology are alien to psychologists, even today (see Dalal, & Misra, 2010). One such question was implicitly posed by a historian in these words, “*the assumed presence of deity converted the temple into a sacred space where a relationship between the deity and the devotee could be sought.*” (Thapar, 2002; page 387) While she explored the development of the temple as an institution from various

aspects, it is for psychologists to understand the sacred relationship. On similar lines a quantum physicist delving into the nature and function of matter reminded us that structuralism and functionalism are fundamental to evolution of mind (Sudarshan, 1995).

Scientists from other disciplines have been exploring these issues, and psychologists must face the challenge. Consider the analysis of Indian myths by a noted Historian D. D. Kosambi (1975), where one finds explanatory models ranging from the ancient Vedic traditions to Marxist models, and even touching the arena of Oedipus complex. In laying the foundation of sociobiology in India, and following Kosambi's explorations in Deccan region of India, a biologist found relevance of sacred terrain for the preservation of flora and fauna of India (Gadgil, 2001). The idea of *deo ban* or sacred grove has now been accepted as a part of policy by the concerned agencies. None ever questioned its scientific validity, perhaps because *"science is the discipline which organizes our experimental communicable 'public' knowledge. It is rooted in experience ('experimental') .."* (Sudarshan, 1995). Mainstream psychologists may have to make such explorations for enhancing their professional competence.

In a remarkable statement, Wilson (1978) observed that several well-known advocates of humanism have *"either rejected religious belief as animism or else recommended that it be sequestered in some gentle preserve of the mind ..."* Whereas for Wilson deeper explorations in traditional religious ethos have potential of refining the 'the evolutionary epic'. In this lies the promise of revealing unknown facets of human nature (1). To achieve this goal without flouting the material hypothesis of science the assumption is that there is preprogramming of religious belief. It is vividly illuminated in the journey of an European student of psychology J. H. Crook who thoroughly situates his exploratory hypothesis in models of evolution and then transcends to realms of consciousness that characterize the yogis meditating in the caves of lofty Himalayas (Crook, 1997; 1978; 2009).

An introspection: Reflection on dominant paradigm of behavior suggests a way

to overcome the difficulty of psychologists in looking at some fundamental issues that has relevance in public domain. In exploring psychic processes, one has freedom to make a choice at least in very broad sense among the two pathways—the way of science which is comparatively recent, and the other that is much older yet relevant, which is exploring mind as an entity not dependent on brain or body. Freud, for more than 20 years chose the former in early part of his career as a distinguished neurologist, but for the later part of his life he became a ‘psychiker’, while building the architecture of mind. Although Freud has interest in evolution, the observations on clients in clinics directed his attention to events of life span that make imprint on individual’s personality. The sacred was an important factor in this theorization. It is however another matter that though inspired by Freud’s psychoanalysis, some curious students of behavior, D. O. Hebb in Canada, A. R. Luria in USSR, and, E. R. Kandel in US, chose neuroscience to understand the bases of mental processes, a path that Freud left long ago.

Hebb (1959) was fascinated by the ideas of Freud, however, he saw something lacking in it. He wrote, *“Pavlov was even more fascinating than Freud, as a way of getting at the mechanisms of what Freud was talking about.”* (page 622) One way of getting at the root of these mechanisms is the connectionist hypothesis. Psychologists, not able to make efficient use of knowledge acquired by physiologists about brain and other systems of body, outright condemn its importance for psychology. Such beliefs continue to flourish and narrow the scope of psychology. Hebb reflecting upon his neuropsychological theory said, *“My theory is not an attempt to substitute physiology for psychology.”* (Page 632) He underlined that psychology must precede physiology. Our question, for example, is what happens in learning? An answer may be that during learning connections are formed between two or more neurons. About fifty years later, Wennekens, Sommer and Aertsen (2003) write that Hebb’s theory relates psychological processes such as learning to anatomical and physiological changes occurring in the brain.

Mind-Brain-Mind: The time has come to replace the brain-mind paradigm by a

new holistic paradigm mind-brain-mind. In a paper (Pirta, 2004), I wrote that there was possibility that “*quantum physics changes our vision of mental phenomena*.” I had no idea of what quantum physics is. But it was based on the statement of a particle physicist E. C. G. Sudarshan made in a general article ‘The promise of quantum computing’ (Sudarshan, 2003). Half a decade later I discovered another article the ‘*Quantum physics in neuroscience and psychology: a neuropsychological model of mind-brain interaction*’ (Schwartz, Stapp, & Beauregard, 2005). To my surprise I found that besides emphasizing the role of quantum physics in understanding the mind-brain link, the authors in this article prominently mention about the quantum Zeno effect. The Zeno effect came into prominence in a paper by Misra and Sudarshan (1977). It is intriguing that Zeno Effect, has importance for psychologists as well as quantum physicists, and is conventionally defined as the ‘*effortfully controlled intentional action*.’ In other words, a person consciously or actively controls certain intended mental activities, which in turn have influence on brain processes. Neurologists are also keenly looking into the problem of intentionality, the discovery of mirror neurons is a step in this direction (Ramachandran, & Oberman, 2006; Rizzolatti, Fogassi, & Gallese, 2006).

In the article by Schwartz et al. (2005) there is an attempt to understand the mind-brain interaction borrowing principles from quantum physics. However, the article underlines the phrase ‘*change the mind and you change the brain*’ (Paquette et al. 2003). The joint work of investigators from different fields has brought convincing evidence that ‘mind does really matter’ (Beauregard, 2007).

This new work, techniques as well as theory, convincingly suggest that mental processes alter the brain processes, thus support a linkage from *mind to brain*. The new work of these investigators from multidisciplinary areas, neurology, psychiatry, psychology, behavior therapy, radiology, etc., suggests a breakthrough in understanding an important transition, a quantum jump from one state to another—from *mind to brain*. In my article (Pirta, 2004) I referred to two transitions occurring between biological and mental processes. Perhaps I have both arrows in mind, from biological (P1) to cultural (P2); and from cultural (P2)

to biological (P1). They signify two distinct processes biological (innate/material) and cultural (learned/non-material) and there is transition, perhaps of quantum nature, from one state to another (from material to non-material, and from non-material to material). This, to me, was distinct from the one which we see in the process of reductionist method (from whole to part), for example, understanding memory or learning, at the level of brain, and then moving down to the action of 5HT (serotonin, a neurotransmitter) at the pre-synaptic level (Kandel, 1999). Here the phenomena are understandable in classical physical-chemical terms. However, when I thought of transition, I was convinced that psychologists have no explanations for applying scientific paradigm to non-material phenomena. The only way to resolve the riddle was to conceptualize mental phenomena as products of biological phenomena. Schwartz et al. (2005) refer to it in terms of two contemporary hypotheses, the mind as an epiphenomenon of brain, and, the mind as an emergent phenomenon of brain. The challenge was, in a way, accepted long ago by neuropsychologists, and the result was satisfying that the mental phenomena were studied rigorously following scientific paradigm. D. O. Hebb (1949) led the way to face this challenge. For him, a stream of thought was the product of phase sequence, activity in groups of various cell assemblies, whereas the stimulation of group of neurons forming a cell assembly could be the equivalent of an idea or image. The underlying feature of this approach is that investigators explore, with remarkable preciseness, the basis of mental processes in the brain processes. Luria defined neuropsychology as the study of the effects of brain processes on mental processes. And the objective of the neuropsychologist was to infer this linkage by diagnosing changes in behavioral or mental processes and then correlating it with brain lesions. The thrust of neuropsychology was on how brain controls mental processes, taking into consideration cultural context (Kotik-Friedgut, 2006).

For psychologists, a greater challenge lies in how mind changes brain. Psychoanalysts overcame this challenge by looking away—adopting a stance as if the brain did not exist. Secondly, they applied the scientific method to non-material phenomena, and adhere to it. In other words, for psychoanalysis, in the paradigm mind-brain-mind, the brain is essentially insignificant and the mental pro-

cesses alone are sufficient to look into mental outcomes. The problem, however, surfaces when there occur a minute change in 'brain' in the mind-brain-mind paradigm, on the one hand it reflects in differences in mental representations of events, and on the other, the change is observable in behavior. If one damages large part of brain, in the cortical region or in the brain-stem, the person goes into a state where no mental function takes place. Therefore the hypothesis that one can discard the 'brain' from the paradigm is not right for psychology. More-over such hypothesis is not testable by the method of science as it flouts the material assumption (essentiality of material 'brain'). Now, if we follow mind-brain-mind paradigm, the material assumption is not defied. It does not matter whether one chooses to understand the effect of 'mind on brain' or 'brain on mind'. In this paradigm 'mind' and 'brain' both are active processes. We already have evidence on the effect of brain on mind, it is indeed important to note that knowledge about the effects of mental processes on measurable changes in the brain processes is accumulating (Beauregard, 2007; Beauregard, Paquette, 2006; Paquette, Levesque, Mensour, Leroux, Beaudoin, Bourgouin, & Beauregard, 2003; Schwartz, Stapp, Beauregard, 2005).

Although it is not essential for an investigator every time to describe the changes taking place in the brain, the important thing is not to discard the fundamental proposition of material substrate, the brain. Consider the case of a therapist. The therapy is definitely the causal factor in this chain of events, but it is entirely beyond his professional domain to understand mediation of 'brain' between therapy and outcome. For example, a therapist following Bandura's cognitive model re-moves spider phobia from the mind of a child, may have little or no understanding of how brain change when the child has spider phobia; and, what changes occur in the brain when the therapy is given, as a consequence of which the spider phobia is reduced. Do we need to understand these changes in brain? The answer is 'Yes'. It is due to this fact that the medical science has made tremendous growth in alleviating the pain or misery from body. Besides this, the byproduct of this approach is the acquisition of massive knowledge base about mechanisms of body and the processes inflicting pain or misery on body (Paquette et al. 2003).

This is not an advocacy of the so called 'medical model' to mental problems. In this model, as I have pointed out above, only the 'brain-mind' linkage was given primacy. The 'mind-brain-mind' paradigm is holistic and visualizes a thinking, introspective and behaving person. Perhaps the neglect of the brain processes has had detrimental effect on the growth of the 'science of psyche' that has longer history than the 'science of body.' It is I think instructive to incorporate some broad categories to designate the underlying processes in 'mind-brain-mind' paradigm. Two of these categories are familiar to students of behavior and evolution, they are physical/biological aspects of the individual evolved through natural selection (biological evolution, P-1) and the other includes acquired ex-periences (cultural evolution, P-2). However, Pirta (2004) has mentioned that a third dimension has been overlooked in both biological as well as cultural streams of evolution. This dimension, tentatively named as 'divine evolution' (P-3), has also been there perhaps since last 30,000 years or so (Armstrong, 2009; Fisher, 1982; Winkelman, 2004).

The 'divine' factor, on the one hand, has been assumed to be one that is the original cause of P1 and P2, but, on the other, it interacts with P1 and P2 in day to day life. For some, the transition mental to divine (P2 to P3) that I referred in my article may appear unnecessary, whereas, it is an ubiquitous phenomenon, in space and time, all over the globe. It was also suggested in the article that the cultural evolution (P2) and divine evolution (P3), could be considered as the byproducts of biological evolution (P1) (Figure 1).

Quantum jump: The important question is how we conceptualize the nature of changes in the physical-chemical particles that constitute brain, on the one hand, and its interaction with the mind as an input and output system, on the other. According to quantum physicist Sudarshan, the physical-chemical inter-actions of the particles are highly dynamic, it hardly matter whether we see them at molecular level or molar level. It is the experimenter's interest where (in space) and when (in time), he wants to look at them (Sudarshan, 1981; 2002). Secondly, whether his emphasis is on physical/biological (P1) or mental/cultural

(P2) realm does not matter. Since the space and time in 'mind-brain-mind'inter-actions are so dynamic that the available classical physical equipment (third-person approaches) or human equipment (first-person approaches) is not able to grasp it, and therefore they appear illusory.

Perhaps a similar phenomenon occurred when particle physicists, following highly reductionist approach, met an impasse of time and space. The experiment to reduce matter into smaller and smaller particles, or quest to see the smallest unit of the matter (the reality stuff) was unsuccessful, instead a strange reversal occurred in the investigator's cognition. It was in the direction from the part to whole. Now the investigator began to conceptualize the reality or the smallest unit of matter (Sudarshan, 1995). Instead of showing the reality directly by experimentation, they began writing equations of the probability of the reality stuff, the quantum, which was unstable in time and space. These conceptualizations about non-existing particles have been though quite successful in the prediction of certain natural phenomena. So the quest of '*rishis*' like Sudarshan (1982; 1983) is continuing, in lonely rooms (like the hermits in the caves of the Himalayas). They have questioned the classical theories about matter (or reality) in their discipline. These theories of the reality of matter, termed now as classical physics, have lost validity.

It is perhaps for this reason that one needs to reformulate the paradigm of psychology. As quantum physics incorporates a view of the world, based on hypothetical particles, which is apparently similar to first-person approaches. The difference is in the rigorousness of approach, quantum scientist uses language of mathematics to make predictions in terms of probability as to what reality is like. It has implications for the new paradigm of psychology—'mind-brain-mind.' Another important feature of quantum mechanical approach is its consideration of first-person approach. In fact, the choice and will of the agent has significance in this branch of physics. It hardly matters whether one talks about the whole person or a hypothetical particle. Sudarshan's quest for knowledge, however, is neither first-person nor third-person, it is perhaps the middle path, but the language is mathematics (Sudarshan, 2002). When he talks in

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first-person, Sudarshan is the Indian *rishi*, when he is close to third-person approach, he takes a step beyond it as a quantum physicist and conceptualizes particles of matter (reality) in mathematical equations of probability.

Whether or not, Sudarshan visualized the handicap of third-person approach in understanding mind, a question dear to C V Raman (Ranganathan, 1995), another eminent experimental physicist of India, is not clear. Raman (1962) adopted psychophysical method to study the perception of light as a way to explore how mind is affected by light. Raman could show through his experimental method how particles of light (quanta or photons) behave. His experimental method fell short of how changes in retinal cells conveyed to brain the messages carried by the light particles or photons, and in brain these electrochemical signals changed into feelings and perceptions of innumerable variety. Sudarshan's mathematical equations about his quest for the fundamental particles of nature brought him close to get rid of the impasse of finding the smallest unit of reality, by conceptualizing particles that were hypothetical yet describing reality of the world or matter. For a quantum physicist, *"mind is an interface between the public world described by the physical sciences and the private world of personal experience and individuality."* (Sudarshan, 1982) In this case the task of psychologist is to understand the latter part, experiences of the being, whereas the quantum physicist would help him to describe in terms of physico-chemical laws. These laws may not be the ones through which we have been understanding the physical world or reality, on which the method of science stands. In the eyes of quantum physicist the properties of agent as equipment and the properties of agent as an object of experimentation, both have significance. The agent is active, not passive, as was assumed earlier in classical physics. For quantum physicist the agent is active, having free will or intentionality, and psychologists must follow this dictum.

Question of consciousness: In mind-brain-mind paradigm, from mind to brain, it is assumed that the representation of external objects/events has already taken place. Alternatively, the investigator arranges experimental conditions or selects environmental conditions to make the representation of specific events in the

mind-brain complex of subject. Once it has occurred, it is only then that mind-brain-mind interactions take place. This should be the arena of the work of a psychologist. For example, whereas study of imagery, schemata, and scripts (Bernstein, & Rubin, 2004; Charlin, Boshuizen, Custers, & Feltovich, 2007; Marks, 1990) are the ways of organizing our experiences, supernatural elements may provide raw material to it. The dynamic interactions of mind-brain-mind implicate consciousness. Although consciousness is ubiquitous phenomenon, it is difficult to define. We consider consciousness an implicit and explicit activity of the mind-brain complex arising from experience that has inner or outer origin. Though the chasm between the mind and the body seems disappearing (Crick & Koch, 1998; Paquette et al., 2003), there is yet no compromise on the independent existence of non-material consciousness. Yet some signs of unification are visible (Crook, 2009; Crook, & Low, 1997; Crook, & Osmaston, 1994), and to pursue the course of psychology on these lines, the proposition of mind-brain-mind paradigm is an alternative. We further assume that the live mind-brain complex is an essential structure for the manifestation of consciousness in its various forms (Sivananda, 1988), but its origin is not dependent upon the mind-brain complex (Crick, Koch, Kreiman & Fried, 2004; Eccles, 1980, 1992; Koch

& Greenfield, 2007; Tsien, 2007). Table 2 contains the essential features of this mind-brain complex. In the following part, I shall briefly deliberate on some hypotheses, presented in the second section, in context of the religious and cultural ethos prevailing in Himachal Pradesh.

B. Approaches to explore supernatural elements

Our objective is to provide an outline for future research on supernatural elements. This may have theoretical significance to explore how culture gets embedded in cognition, and color our perception, emotions and behavior. Four approaches were followed: naturalistic observation, case study, human-animal interaction, and quasi-experimental design.

Naturalistic observation

Crooke (1896/1968a) uses a classification where *deos* signifies greater gods of greater tradition of Hindus (the Brahmanism), and *deotas* are godlings of little tradition, belonging to the masses. Our observations are related to *deotas* and

Table-2
Essential features of cognitive system to mind-brain-mind paradigm.

Features of mind-brain complex	
1.	A psychologically meaningful configuration of physical energies, after representation in the mind-brain complex takes an entirely different form (psychological here refers to the subject matter of psychologists, it may overlap with other disciplines). It is coded as a unique pattern of electrical, chemical and physiological properties (Tsien, 2007) and is then capable of generating thoughts, feelings, emotions, desires and all other kinds of psychological material, the mind stuff.
2.	The object of the mind-brain complex can be manipulated in numerous ways to achieve various ends. Such variety and complexity in manipulation of objects is not possible outside the mind-brain complex (Crick, Koch, Kreiman & Fried, 2004; Sivananda, 1988, 2002).
3.	The mind-brain complex invents concepts and symbols intrinsically as well. This is obvious from the diversity of thoughts, feelings and desires. The mental elements, which arise without external material interaction, also undergoes through the preceding two processes (Faw, 2006).
4.	Thus material and non-material entities acquire similar properties in our mind-brain complex. This issue has been explored in context of social and physical pain (MacDonald, & Leary, 2005; Panksepp, 2003; Panksepp, Moskal, Panksepp, & Kroes, 2002).
5.	An entity, such as supernatural element, can be encoded in the live mind-brain complex only, and once encoded it acquires material existence (Greenfield & Collins, 2005).
6.	The social institution acts as a facilitator or inhibitor of supernatural elements in particular cognitive systems within the individual (Pirta, 2005, 2006, 2007).
7.	The social institutions, however, facilitate the growth of certain class of entities, and inhibit others through "cultural selection," a process analogous to "natural selection" (Crook, 1995, 1997, 1998; 2009).
8.	The individual is not fully aware of the dynamic interactions into which supernatural elements enter, from one moment to the next, they may conscious or unconscious (Greenfield, 2002; Kandel, 1999).
9.	The propagation of culture specific ideas related to supernatural elements enrich varieties of consciousness in the mind-brain complex (Faw, 2006; Norenzayan & Hansen, 2006).
10.	The mind-brain complex act as crucible where exceptional varieties of consciousness flourish; it is evident all over the world in current trends of religion and spiritualism (Moss, 2001; Raguram, Venkateswaran, Ramakrishna & Weiss, 2002; Travis, 2002).

its institutions which vary in size. The institution of deity provides evidence for linkages between supernatural elements and coherence in social structure in villages. We assume that supernatural agents are of mental origin and therefore amenable to cognitive analysis. These agents are further associated to culture specific lexicon under broad categories such as “deities”, “souls”, “spirits”, “ghosts” and others (Boyer, 2003). Some unique features of these concepts are that they do not remain just at the cognitive level but affect the individual, implicitly or explicitly, at various levels: thinking and planning; feelings and emotions; and, behaviour in mundane life. In general, concepts of supernatural agents have developed in association with the institution of temple, which has significantly molded the course of human history in innumerable ways (Thapar, 2002). These agents have linkages with the social and political institutions. Our observations (Pirta, 2005; 2006; Pirta, Ranta, & Vashisht, 2007) in some areas of Himachal Pradesh suggest that the institution of temple is run as a common property resource by people of a village (smaller deity) or group of villages (bigger deity).

Given that a supernatural agent has its origin in cognition of people as emergent phenomenon, and then through natural selection gets established as an evolutionary predisposition, the next important thing is to visualize its functional significance at individual and group level. This hypothesis about the cognitive origins of supernatural agents further assumes that the event is not confined to a particular moment in the evolutionary history of *Homo sapiens*, but can take place anywhere even today (Moreira-Almeida, & Koss-Chioino, 2009).

Case study

The reconstructions of narratives at various group levels highlight the role of supernatural agents in the resolution of social conflicts, so that the cohesiveness in a group remains intact. Two such rituals are *chhuan* (severing social ties) and *paap* (soul of deceased). During the course of history of *Homo sapiens*, several other mechanisms were associated with the cognition of supernatural elements—particularly the beliefs about them and its propagation in a group. They involve punishment of non-believers (the free-riders) and reward of believers (the followers). The theory of learning in psychology has rich repertoire on the principles of reward and punishment which governs the acquisition and extinction of

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a behavior. These paradigms essentially involve training or instruction, whereas, in real-life situation the behaviors are transmitted through social processes such as observation, imitation and conformity (Pirta, 2005; 2007). The exploration of mechanism of transmission of the cognitions of supernatural elements is an important area of research.

Over a period of almost three decades, the attachment theory is getting credence in social psychology and mental health, and the investigators are general-izing attachment to non-material entities such as God (Cicirelli, 2004). The at-tachment becomes so strong in some cases that the devotee personifies the deity, as we find in cases of possession. The special embodiments of deity are the *chelas* (the *gurs* or *malis* or the spokespersons of the deity). They are the traditional healers (Pirta, 2006; Pirta & Ranta, 2007). It may be noted that eth-nographers and anthropologists have been collecting important information on these shamans which may help psychologists (Hitchcock, & Jones, 1976; Sax, 2009).

The phenomenon of possession is a classic example that involves the assumed presence of the supernatural agents and finds frequent reference in the indig-enous psychiatry (De Sousa, & De Sousa, 1984). During possession a unique change occurs in the body and mind of the individual at least overtly. The tradi-tional healers also undergo trance during the course of therapy (Crook, 1997; 1998). These rituals of spirit possession (Singh, 2003; Spanos, 1994) have im-mense significance in mental health (Pirta, 2005; Pirta & Ranta, 2007; Pirta, Ranta, & Vashisht, 2008).

Human-animal interaction

The study of attachment system between mother and infant (Ainsworth, & Bowlby, 1991; Poindron, 2005) is important area of contemporary research in social animals, as maternal behaviour is crucial for herding instinct and survival of the offspring. Our work began in the 1980s exploring mother-infant relations in rhesus monkeys (Pirta, 2007). But the recent work on herds of sheep and goats provide a new dimension to it (Pirta, 2009). The study of transhumance introduces one

to the complex dynamics of supernatural elements across the verticality of the Himalayas from the Shivaliks to the Tibetan plateau.

It is reasonable to hypothesize that the richness of diversity of supernatural elements that we find in one species can occur only through cultural evolution, since the biological evolution predisposes for uniformity. However, it is quite possible that cultural traits can bring biological changes in populations over a period of time (Crook, 1995). In this context, the pastoral system of transhumance, practiced by Kanaoras and Gaddis of Himachal Pradesh has special significance. In transhumant pastoral system a family moves with the herd of sheep and goats throughout the year and the animals always live in open. During this movement the pastoralists encounter various cultural groups over the foraging range of their herds. The study of transhumance has significance in two ways: (a) direct observation on herd life of sheep and goats which are models of attachment system; and, (b) study of supernatural elements incorporated by the herders from different cultures.

Quasi-experimental designs

The belief in supernatural agents is universally associated with various aspects of positive and negative deviance in mental health. It is an important issue for cognitive psychologists. One way to achieve this goal is to explore folk mind (Allport, 1954/1975). In the last few years we have developed this thesis (Pirta, 2005; 2006; 2007) as an alternative model of mental health in India. This holistic model incorporates native cognition (Pirta, 2004), the resiliency-vulnerability dimension (Almedom, 2004), and the wear and tear of body and mind—the allostatic load (McEwen, 1998; Ray, 2004). In this venture, cognitive science methods (Bering, 2006; Shariff, & Norenzayan, 2007) are prerequisite for the analysis of the mental processes of people. And the traditional institutions are spaces for collaboration between the traditional healers and the cognitive scientists. We have been exploring the explicit and implicit memories to study the role of supernatural elements in positive and negative aspects of human well-being. These findings together suggest that culture is a medium for cognition and *vice versa*.

Attachment theory has been applied to understand the role of supernatural agents as attachment objects (Cicirelli, 2004; Granqvist, & Hagekull, 1999; 2000; Kirkpatrick, 1998). A significant aspect of Bowlby's attachment theory is the idea of internal working models (IWMs), which link formation of attachment with caregiver or attachment object to the infant's cognitive development (Ainsworth, & Bowlby, 1991). One way to understand these IWMs of an individual is to explore the relationship of attachment and memory. The four characteristics of attachment relations are *maintenance of proximity* to attachment object; *dis-tress* upon separation from the attachment figure; approach towards attachment figure when there is external threat (*safe haven*); and, exploration of external environment when the attachment figure is available (*secure base*). We have explored some of these attachment relationships in context of supernatural elements (Kumari, & Pirta 2009; Thakur & Pirta, 2009). From another series of studies it was found that God serves as a secure base for an individual to explore the external world, and may become a safe haven to meet the external threats.

Conclusion

A change is discernable from James (1902) to Armstrong (2009), now thinkers from various disciplines are looking into the functional aspects of supernatural agents (Dawkins, 2006; Jeeves, 2005; Kirkpatrick, 1999). Whether God exists, or not, is not an issue, the main problem for a cognitive scientist is to understand the dynamics of various supernatural cognitive elements and their association with thinking, feeling and behaviour. Scientists are exploring these supernatural beliefs to develop novel theories to human cognition involving Darwinian mechanisms (Bering, 2006). These micro-level analyses of folk psychology (Boyer, 2003; Metzinger, 2005), however need complementary information on the social milieu to understand the functional value of these supernatural cognitive elements. In addition, an important aspect of the institution of deity is to keep cohesion in a group. This is an interesting hypothesis and needs examination according to various contemporary models of group selection in evolutionary biology (Boyd et al, 2003; Nowack, 2006). Irrespective of the origin at a particu-

lar time in history, once the cognitions of supernatural elements get representation in mind, they affect the behaviour of individual, and his interactions and relationships a social network began to change. These cognitions undergo replication, selection and retention and evolve culturally in a group.

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SELF ESTEEM OF TRIBAL AND NONTRIBAL COLLEGE STUDENTS OF TRIPURA

Anjana Bhattacharjee

ABSTRACT

Self-esteem is the collection of beliefs or feelings we have about ourselves, our "self-perceptions." How we define ourselves influences our motivations, attitudes, and behaviors and affects our emotional adjustments. The goal of the present study was to ascertain the self esteem of tribal and non-tribal college students. The study also attempted to find out the self esteem of male and female college students. The sample of the study consisted of 100 college students. Among them 50 were tribal students and the rests were non-tribal college students. Again among them 50 were male students and the rests were female students. Data were collected by Background Information Sched-ule and Self Esteem Inventory. Results showed that self esteem of college students differed significantly in relation to their community and gender. This further indicated that tribal college students possessed low self esteem in comparison to non-tribal college students. Again, male college students pos-sessed high self esteem in comparison to female college students.

Key Words: Self esteem, Gender, Community.

The concept of self is probably that most distinctive and indispensable concept in psychology of personality. There is a vast literature in psychology dealing with nature of self esteem, development of self esteem and effect of self esteem on behavior and adjustment. The "self" part of self-esteem pertains to the values, beliefs and attitudes that we hold about ourselves. The "esteem" part of self-esteem describes the value and worth that one gives oneself. Self-esteem is the product of two internal assessments or judgments, the global judgment and one's self-worth.

Students' self-esteem is influenced by many factors (Osborne, 1997). Parents, teachers, co-workers, friends, fellow classmates, and the environment are constantly influencing self-esteem. The relationships between self-esteem and other variables have been extensively researched. Mullis and Chapman (2000) studied the relationship between coping, gender, age and self-esteem in adolescents and found that adolescents with higher self esteem used more problem focused coping strategies and adolescents with low self esteem used more emotion focused coping strategies. The study of Kling et al (1999) also revealed that male possessed high score in regard to global self esteem than females.

Many studies indicate that high self-esteem has many positive effects and benefits, especially among college students. Students who feel positive about themselves have fewer sleepless nights, succumb less easily to pressures of conformity by peers, are less likely to use drugs and alcohol, are more persistent at difficult tasks, are happier and more sociable, and have the tendency to perform better academically. On the other hand, college students with a low self-esteem tend to be unhappy, less sociable, more likely to use drugs and alcohol, and are more vulnerable to depression, which are all correlated with lower academic achievement (Wiggins, 1994).

With the given background an attempt was made to study the self esteem of college students of Tripura. Tripura is a small state located by hilly areas situated in the north-east part of India. In total 19 tribal communities (eg, Tripuri, Reang, Jamatia, Chakma, Lusai, Halam, Kuki etc) live in Tripura who constitute 31% of the total population of the state. In Tripura no such attempts have been made to study the self esteem of the college students. Therefore the purpose of the study was to determine the self esteem of tribal and nontribal college students. The study also attempted to compare the male and female students in respect to their self esteem. Further it attempted to study the socioeconomic and family profile of the study subjects.

HYPOTHESES

In accordance with the said objectives, the following hypotheses were formulated:

Personally perceived self esteem of the tribal and non-tribal college students differ significantly, irrespective of age or gender.

Socially perceived self esteem of the tribal and non-tribal college students differ significantly, irrespective of age or gender.

Personally perceived self esteem of the male and female college students differ significantly, irrespective of age or community.

Socially perceived self esteem of the male and female college students differ significantly, irrespective of age or community.

Self-Esteem among College Students

METHOD

Sample:

A group of 100 college students (50 tribal students and 50 non-tribal students) of 19-22 years were selected purposively from three colleges of Tripura namely, M.B.B. College, Women College and Ramthakur College. Again among them 50 students were male and the rests were female students. They were matched in terms of age and education. All of them belonged to middle socio-economic status.

TOOLS:

Back Ground Information Schedule - a specially designed **Semi-Structured Questionnaire** was used to gather information about socioeconomic and family background of the college students.

Self Esteem Inventory, developed by M.S. Prasad and G.P.Thakur (1977) was used. The inventory measures both the aspects of self esteem, i e., personally perceived self esteem and socially perceived self esteem. It consists of 30 items of which 17 items are socially desirable and 13 items are socially undesirable. The maximum score of this inventory is 210 and minimum score is 30. Here low score indicates poor self-esteem while high score indicates high self-esteem. For the purpose of the present study Bengali adapted version of the inventory was used.

DATA COLLECTION AND ANALYSIS:

Objectives of the study were properly briefed to all the study subjects and then the subjects who were willing to participate were covered in the study. For all the subjects self administration method was employed. Data collected from the sub-jects were checked and edited so that any gap or confusion identified at the preliminary stage could be clarified henceforth. The filled in data sheets were subjected to in-house through editing and scrutiny. Finally, in case of quantita-tive data descriptive statistics like measures of Central Tendency and disper-sions were carried out and then test was applied for verification of the research hypotheses.

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Findings of the Background Information Schedule revealed that all the study subjects were belong to the age group of 19-22 years. So far as demography is concerned the results showed that most of the students (88%) were residing at Agartala while 12% were the resident of rural areas of Tripura. Educational background of the students revealed that 74% students were studying in humanities and 26% were studying in science. Again among them 28% and 36% were studying in 1st year and 2nd year respectively and the rests were studying in 3rd year of their course. So far as marital status is concerned the present study revealed that all male students were unmarried while in case of female students 16% were married. Out of 50 male students 14% were addicted in alcohol, while among the females 8% were addicted in betel.

Family profile of the students revealed that most of them (76%) belonged to joint family. So far as size of the family is concerned the results showed that 60% students had 4-6 members in their families followed by 7-9 members in case of 12% students and more than 10 members in case of 6% students. However 22% students reported that they had only three members in their families. Most of them had peaceful family environment however disturbed family environment was found in case of 18% students.

The word self esteem refers to confidence and satisfaction to oneself. So far as Self-esteem of the tribal and non-tribal students is concerned the findings revealed that personally perceived self esteem of the tribal and non-tribal college students differed significantly at 0.01 level of significance ($P < .01$). Therefore, the first hypothesis i.e., 'Personally perceived self esteem of tribal and non-tribal college students differ significantly, irrespective of their age or gender' has been accepted. Hence it can be stated that personally perceived self esteem of tribal students is low than their counterparts (Table 1). The probable reason behind this may be attributed to the adherence of tribes to their culture. A strong sense of community belongingness in them and confinement to their cultural values and norms may restrict them to get involved with the changing outside world. Tribes are primitive and prefer living in isolation i.e. in remote areas or dense forests, which generally cut-off from other civilized areas. Hence the tribals have limited contact with other societies (Mehta 1994). Due to this they get fewer opportunities for self-awareness, self-expression and also awareness about the world, which all contribute to foster greater self esteem. Thus they lag behind in acquiring higher self esteem in comparison to non-tribals. The study of Campbell & Fehr (1990) stated that people with a low self-esteem have vague notions of who or what they are. They are less confident in themselves and their relationships and this may cause them to respond more favorably to others who are like them.

Table 1: Comparison of Tribal and Non-tribal College Students in Regard to Their Personally Perceived Self Esteem

Sample Group	Number	Mean	SD	t-Value	Level of Sig.
Tribal students	50	132.40	14.85		P < 0.01
Non-Tribal Students	50	141.26	13.46		

Again findings revealed that socially perceived self esteem of college students also differed significantly ($P < 0.01$) in regard to their community differences. Therefore, the second hypothesis i.e. 'Socially perceived self esteem of tribal and non-tribal college students differ significantly, irrespective of their age or gender' has been accepted. Hence it can be stated that socially perceived self esteem of non-tribal students is high than their counterparts (Table 2). This could be because of the distinctive lifestyle or socio-cultural characteristics of the nomadic society. The social isolation, lower socio-economic status and educational backwardness may be some of the factors accounting for lower self esteem of the tribal students as these conditions do not provide stimulating environment to them to develop positive self image in them. The lower the economic status of a person more frustration he experiences both in personal and social relationships and thereby has a poor self concept and low self-esteem (Kundu 1984).

Table 2: Comparison of Tribal and Non-tribal College Students in Regard to Their Socially Perceived Self

Sample Group	Number	Mean	S. D.	t-Value	Level of Sign
Tribal Student	50	130.17	13.61	-2.88	P < 0.01
Non-Tribal Students	50	130.72	12.52		

So far as Self-esteem of the male and female students is concerned the findings revealed that personally perceived self esteem of male and female college students differed significantly ($P < .01$), Hence, the third hypothesis i.e., Personally perceived self esteem of male and female college students differ significantly, irrespective of their age or community has been accepted. So, it can be stated that personally perceived self esteem of male students is high than their counterparts (Table 3).

Many studies evaluated gender differences in self-esteem and found that adolescent females score lower on self-esteem than do adolescent males (Nottelmann, 1987; Cairns et al., 1990; Wigfield et al., 1991). Simmons and Rosenberg (1975) found that more girls reported lower self-esteem than did boys during middle and late adolescence. O'Malley and Bachman (1979) also revealed that females had statistically lower self-esteem than did males. The study of Kaminski et al., (2005) found that boys had higher self concept than girls on the physical ability and physical appearance subscales, but girls had higher self concept than boys on the reading subscale. Gen-tile et al., (2009) also noted differences between male and female adults in athletic, physical appearance, self satisfaction self and self esteem.

Table 3: Comparison of Male and Female College Students in Regard to Their Personally Perceived Self Esteem

Sample Group	Number	Mean	S. D.	t-Value	Level of Signi.
Male Students	50	133.38	13.59	3.25	P < 0.01
Female Students	50	124.14	14.76		

Again the results showed that socially perceived self esteem of male and female college students also differed significantly ($P < .05$). Therefore, the second hypothesis i.e. 'Socially Perceived Self esteem of male and female college students differ significantly, irrespective of their age or community has been accepted. Hence it can be stated that male students have high socially perceived self esteem than the female students (Table 4).

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This may be due to the reason that in India a patriarchal system is still dominant: boys in all cultures are amongst the advantaged members of the family as well as society. They are allowed more exposure to their surroundings in comparison to girls especially in the middle and lower socioeconomic class which in turn enhance their self esteem. Like other societies in tribal societies too, the girls are expected to do household chores like cooking, cleaning and taking care of younger siblings and in adolescence, they are usually confined in home. The tribal girls are less often exposed to an enhanced social climate (Henry and Mishra 2006) which further contributes to their lesser awareness of their own potentialities and thus lowers their self esteem level. The study of Seifert and Miller (1988) stated that males judge less harshly than females, which in turn causes female performance and behaviour to be evaluated negatively which again decreases their self esteem.

Table 4: Comparison of Male and Female College Students in Regard to Their Socially Perceived Self Esteem

Sample Group	Number	Mean	S. D.	t - Value	Level of Sign.
Male Students	50	130.90	11.27	3.09	P < 0.01
Female Students	50	123.42	12.86		

CONCLUSION

So on the basis of the present findings finally it can be concluded that among the college students of Tripura, tribal students possessed low self esteem in comparison to non-tribal college students. Further male students possessed high self esteem than female students. To bring this culturally and socially isolated population into the mainstream it is very much necessary to take some measures for the tribal students particularly for the female tribal students to enhance their self esteem which will in turn help them to achieve academic success as well as to adjust more adequately with the outer world.

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Note:

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THE RELATIONAL WORLD OF RAGPICKERS

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ABSTRACT

Millions of children today live in difficult circumstances and are struggling for their existence. The present study makes an effort to explore the relational world of rag pickers in terms of their self image and self other related-ness. A self developed interview schedule has been used. Thirty rag picking children from slums near Gomti Bridge and Rahim Nagar serve as sample. Results obtained showed that most of the subjects had good opinion about their self and others. Felt needs are marked. Need for intervention for positive handling of negative situations was also evident.

The continent clearly marks the presence of children in difficult circumstances. According to 2001 Census, India is estimated to have more than 400 million children below the age of 18 years out of which 35 million children are in the need of care and protection. Along with this an estimated 12.6 million children are engaged in hazardous occupations (2001 Census).

According to Government of India children in difficult circumstances include children in labour, children neglected or treated as juvenile offenders, children physically or mentally challenged, destitute, slum and migrant children etc. (infochangeindia.org). Most of these children live on streets and in other impoverished conditions like slums. A slum may be defined as an overcrowded area characterized by substandard houses without even essential amenities (Singh, 1997). According to 2001 Census, Uttar Pradesh has the second largest number of cities and towns with slum population.

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The present study focuses on ragpicking children living in slums. Literature shows gaps in empirical researches on the sample of rag pickers and studies which have been done largely focus on incidence, demographic variables, developmental issues (Verma, 1999), preferences for social support in stressful life situations (Gupta, Verma, 1995). Sekar (2004) found the enrolment ratio for rag pickers in Noida city to be 90.8% in the age group of 6 to 11 years. Another study on the incidence of rag picking as related to the age of these children reports that 32% were below 4 years; 7.24% were in the age group of 5 to 6 years; 14.38% were in 7 to 8 years; 28% 9 to 10 years; 29.62% were of 11 to 12 years; 20.44% were 13 to 14 years (nipccd.nic.in).

It is not just being born in difficult circumstances but also missing on emotional supplies that predisposes these children to mental health issues. How does their selfhood develop, what becomes of their relational world, what is their perception of the world etc, were some of the issues that intrigued the researcher.

PURPOSE:

To explore the relational world of rag pickers in terms of their self-image and self-other relatedness.

METHOD

DESIGN:

Ex-post facto research with an exploratory orientation.

TOOL:

A self developed interview schedule loaded on the dimensions of opinion about self, winning and losing, performing, relationships, coping with negative emotions, comfort zone, comparison with haves, future vision, happiness and perception of world was used for the study.

SAMPLE:

The sample comprised of thirty rag picking children in the age group of 9 to 14 years from slums near Gomti Bridge and Rahim Nagar in Lucknow city.

RESULTS: As the purpose was to explore the relational world of rag pickers in terms of self image and self other relatedness, the results obtained are also discussed in two sections- one pertaining to self- image and the other pertaining to self -other relatedness, and they are being taken up in the same order. Since the responses were recorded verbatim and were qualitative in nature, content analysis was used to obtain meaningful response categories. The voluminous data after content analysis brought forth meaningful insight into their psyche and the world view. Percentage analysis was used. As it is not possible to give all the response categories for each sub-dimension, the responses that emerged predominantly in terms of distribution of responses are presented here for the **dimensions of self image and self-other relatedness** in the present paper.

SELF –IMAGE : The results obtained on the dimension of self image are given in the form of a composite table below. Table 1 shows the predominant response category that emerged on different sub-dimensions.

TABLE 1: Predominant Categories Pertaining to Self Image on Various Sub-dimensions:

S. No.	Sub-Dimension	Predominant Responses & Percentages
1.	Opinion about self	Feel good- 'bahut achaa lagta hai' (86.66%)
2a.	Winning (i) Felt reaction on winning (ii) Behavioral reaction on winning	(i) Feel good- 'badhiyan lagta hai' (93.33%) (ii) Celebrate- 'khushian manate hain' (48.57%)
b.	Losing (i) Felt reaction on losing (ii) Behavioral reaction on losing	(i) Feel bad- 'achaa nahi lagta hai', 'bura lagta hai' (64.70%) (ii) Cry, do nothing, become upset on losing- 'rone lagte hain', 'kuch nahin karte' (40%)
3.	Performing (A) On completion of task (B) When the task remains incomplete	(A) Feel good- 'achaa lagta hai' (100%) (B) Feel bad- 'achaa nahi lagta hai', 'kharaab lagta hai' (51.61%)
4.	Future vision (A) Place where would like to take birth (B) Kind of world would like to create	(A) In same home and with same parents- 'jahan hamari mummy hongi wahi paida honge' (56.66%) (B) Create houses- 'ghar banayenge' (24.13%)
5.	Coping with negative emotions (A) Things feel scared of (B) Behavioral reactions	(A) Animals- 'saap se darr lagta hai', 'bander se', 'bhalu se darr lagta hai' (50%) (B) Pray- 'Prarthana karte hain' (21.56%)
6.	Comfort zone (Things liked)	Foods- 'khana', 'maali', 'chai' (29.26%)
7.	Happiness (A) Things that give happiness (B) Behavioral reactions on being happy	(A) Books and studies- 'padhne se khushi milti hai', 'agar padhai kar payein to khushi milti hai' (15.15%) (B) Celebrate- 'mummy-papa ko ladoo khilate hain' (28.57%)

The various sub-dimensions given in Table 1 are discussed one by one –

(i) Opinion about self: Self-image is greatly influenced by the way a person feels about himself or herself. When asked how the subjects feel about their own self, results showed that 86.66% children reported of feeling good about their own self viz- “Bahut achaa lagta hai” (feel very good).

(iia) Winning: Whether a person perceives himself as a winner or loser greatly influences his or her self –image. Therefore how do the children respond to winning and losing was also explored in the present research. When they were asked about their feelings and behavioral reactions on winning, obtained data showed that they feel good on winning –“achaa lagta hai”(feel good- 93.33%), whereas 6.66% reported of extreme happiness.

When asked about their behavioral reactions on winning, the responses included – celebration, sharing, rag picking, feeling happy, doing nothing, etc.. Out of these reactions “celebration” emerged as the most dominant response (48.57%) reflected as -“khushiyaan manatey hain” (We celebrate).

(ii b) Losing: When subjects were asked about their felt and behavioral reactions on losing results showed that 64.70% of subjects reported feeling bad – ‘achaa nahi lagta hai”(do not feel good),17.64% reported feeling angry and 8.82% reported ambivalent feelings.

Reported behavioral reactions included playing, wrestling , wandering, going to work, crying, doing nothing, becoming upset, seeking support from others. Of these reactions the most frequently given reaction was that of crying, doing nothing and becoming upset, given 40% of subjects. In other words, 40% of subjects responded in terms of passive way of coping. This calls for attention.

(iii) Performing : Often, children perceive their capacity to perform as part of their self-image. Here subjects were asked how they feel (a) on the completion of any task, (b) when the task remains incomplete. Results showed that all the subjects reported feeling good on the completion of a task – “ achaa lagta hai (feel good).Whereas the felt reactions pertaining to occasions when any task remains incomplete included – feel bad, do not feel good and right, feel angry.

Of these the most dominant response was feeling bad, given by 51.61% of subjects – “ achaa nahin lagta”(do not feel good).

Relational World of Ragpickers

(iv) **Future Vision:** This dimension addressed two issues i.e. the place where the subjects would like to take birth and what kind of world they would like to create if given opportunity and power. In terms of first issue i.e. the place where the subjects would like to take birth, results showed that 56.66% of subjects wanted to take birth in their present home with same parents, 20% appeared to be fatalistic and indifferent, 13.33% wanted to take birth at a different place and 10% wanted to take birth at a poor house-“ gareeb ghar mei paida hoinge” (will take birth in a poor house). Thus, responses given showed satisfaction from their present life. The most dominant response in terms of the second issue was that of houses (24.13%) “ghar banaenge” (make houses). In other words, needs associated with the present life of subjects predominated. Their present life needs seem to be overwhelming.

(v) **Coping with Negative Emotions :** On this dimension subjects were asked about the things they feared and also their behavioural reactions when scared. Results showed that subjects feared animals , god and ghosts, fire, water, elec-tric current, people and stealing. Of these the most dominant response was that of animals given by 50% of subjects viz-“saap se daar lagta hai” (scared of snakes).

Reported behavioural reactions pertaining to their coping included avoidance and withdrawal, attack, pray, nothing, active coping, seek support. Of these the most frequently given response was praying, given by 21.56% of subjects. Thus the results suggest the need for intervention as only 19.60% of subjects en-gaged in active coping.

(vi) **Comfort Zone :**On this dimension subjects were asked about the things they like most. Results obtained showed that 29.26% of subjects reported their liking for food, which was also the most dominant response-“khana” (food) ,” “machli” (fish). Besides this comfort zone included responses like play things, buildings, money , people and everything. What they lack in their life figures most dominantly.

(vii) **Happiness:** When asked about the things which give happiness and behavioural reactions on being happy , results included – eatables, nature, books and studies, people, playing , occasions, money, everything, prayer , mosque, wandering. Of these the most dominant response was books and studies given by 15.15% of subjects – “padhne se khushi milti hai” (studies give happiness).

Reported behavioural reactions included celebration , playing, sharing, going out, sit and study, work, nothing, come back. Of these most dominant response was celebration given by 28.57% of subjects.

(II) SELF-OTHER RELATEDNESS: The obtained results on the dimension of self –other relatedness are given in the form of a composite table below. Table 2 shows the predominant response category that emerged on different sub-di-mensions.

TABLE 2: Predominant Responses on Sub - dimensions of Self Other Relatedness

S.No.	Sub-dimensions	Predominant Responses & Percentages
1.	Opinion about others	Preceived others to be good- 'achay lagte hain', 'thik lagte hain', (90%)
2.	Handling interpersonal confict	Feel bad-'achaa nahi lagta hai', 'kharaab lagta hai' (50%)
3.	Comfort zone (people liked)	Parents and god-'Mummy-Papa abse schay lagte hai', 'allah achay lagte hain' (38.23%)
4.	Comparison with haves (A) Reaction on seeing their age mates wearing good clothes (B) Reaction on seeing other children going to school	(A) Feeling good and happy- 'achaa lagta hai', 'bahut achaa lagta hai' (78.12%) (B) Feel good Ok- 'achaa lagta hai', 'soch ke achaa lagta hai' (90%)
5.	Perception f world (A) Things liked in people (B) Things disliked in people	(A) Those people who do not beat and fight- 'jo ladai nahi karte' (16.12%) (B) Fight, Angry, use abusive language, beat (65.63%)

The various sub- dimensions pertaining to self-other relatedness are dis-cussed one by one –

(i)Opinion About Others: Much of the way we relate with others depends upon our opinion about them. When asked how the subjects feel about others in the world, results included – good, don't like them, some good and some bad. Of these 90% of the subjects perceived others to be good, which was the most dominant response – “achaa lagti hai”(appear good).

(ii)Handling Interpersonal Conflict- This dimension focused on the felt reactions of subjects when rejected or ignored. Responses included- feel angry and sad, feel bad, no feeling, give him slap, redundant. Among these responses the most dominant response was feeling bad given by 50% of the subjects- “achaa anhin lagta hai” (do not feel good). Thus, in general, subjects reported feeling sad when rejected or ignored.

(iii)Comfort Zone- On this dimension subjects were asked about the people they liked the most. Results obtained included – parents, God, siblings, owners of organizations and others. Among these the most frequently given response was that of parents and God given by 38.23% of subjects each.

(iv) Comparison with Haves- Comparison with others affects the way we relate with them. Here two issues were addressed. One focused on the felt reactions of subjects on seeing their age mates wearing good clothes and the other focused on felt reactions of subjects on seeing other children going to school.

On the first issue, reported felt reactions included- feel good and happy, do not feel anything, feel bad, they look good, desire to look like them. Of these the most dominant response was feeling good and happy on seeing age mates wearing good clothes, which was given by 78.12% of subjects-“achaa lagta hai”(look good).

Reported felt reactions on seeing other children going to school were – feel good and O.K. and desire to go to school. Of these the most dominant response was feel good and O.K. given by 90% of subjects-“achaa lagta hai”(feel good). Thus in general when compared most of the subjects feel good but the need to teach them and fulfill their basic necessities was also evident.

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v) Perception of World – Here, subjects were asked about the things liked and disliked in people. Things liked in people as reported by the subjects were- appearance, friendly nature, who do not beat and fight, good values, who give recognition, everything. Among these the most dominant response was that for those who do not beat and fight given by 16.12% of subjects- “jo ladai nahin karte” (who do not fight).

Things disliked in people reported were-fight, angry, abusive language, beat, don't listen, lie and dishonest, who are unhygienic, do not work, nothing. Most dominant response was fight, angry, use abusive language, beat, and who do not listen, given by 65.63% of subjects.

Thus, on the relational front these children look for emotional warmth and support. They want people to listen to them and connect with them in a positive way. This needs to be the point of concern for intervention on these children.

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Particulars about the Indian Journal of Psychological Science

1. Place of Publication : Chandigarh
2. Periodicity : Half Yearly (December and June)
2. Medium of Publication : English
3. Publisher's Name : Dr. RosHan Lal Dahiya
Nationality : Indian
Address : # 2265, Sector-19 C,
Chandigarh-160019 (INDIA)
4. Printer's Name : SAAR Printers, #579, Kesho Ram
Complex Opp. Sector-45-C, Chandigarh
5. Editor's Name : Dr. V.V. Upmanyu
Address : Dept. of Psychology, Panjab Universtiy,
Chandigarh-160014, (INDIA)
6. Owner's Name (s) : Indian Association of Psychological Science

I, RosHan Lal Dahiya, hereby declare that the particulars given above are true to the best of my knowledge and belief.



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