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TRAUMA SCALE FOR DISASTER SITUATIONS

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ABSTRACT

This paper presents the TSDS-Trauma Scale for Disaster Situations that was developed after the recent earthquake in Pakistan. The TSDS was developed for children and adolescents of 10-16 years i.e. 6-10 graders. Ratings from five experts were taken on items to determine scale content validity that is $0.72_{cvi,}$ *with an inter-rater reliability of 0.9α with significant intra-class correlation. Scale was administered to 382 children to establish the scale reliability (0.7α) and test re-test reliability (0.93α). The scale has 10 items that explain 87% of the variability. The tests for TSDS were started in immediate post-disaster phase and completed in recovery phase thus can be used in late recovery phase to determine residual characteristics associated to trauma and PTSD. Scale covers the core criteria for diagnosis apropos DSM-IV.*

Key Words: Disaster; Children; Adolescents; Trauma Scale, Earthquake

INTRODUCTION

October 8, 2005, was the day when northern areas of Pakistan including Kashmir were rocked by an earthquake of 7.6 on Richter scale. In 2005, world had observed 24 earthquakes in different countries and 89354 people had died including 87351 deaths in Pakistan that is 97.75% of total deaths (http://www.infoplease.com/ipa/A0931004.html).

Natural disasters not only destroy homes and landscapes, but can also wreak havoc with the emotional well-being of the survivors. These reactions are a normal response to abnormal circumstances. Natural disasters make situations precarious for survivors that produce anxiety and stress. Watching people die around where individual feels helpless to act accordingly pushes him to the verge

of severe depression where life seems worthless. In a situation of disaster people come forward to help survivors, this is the situational necessity. However, it cultivates a sense of lose of control for survivors on their own lives. This produces further depression and the individual becomes an oscillating particle of this vicious cycle.

Statistics show a higher number of deaths among children (ERRA[2] - Earthquake Reconstruction and Rehabilitation Authority - Pakistan; www.erra.gov.pk), because the time of earthquake was the time for the children to attend the schools. When see in retrospect, we find a similar situation in Armenia in 1988, when an earthquake of 6.9 (Richter scale) hit the area while children were in schools. According to Armenian National Mental Health Research Centre, there were a significant number of individuals who were suffering from different psychological disorders and among them children and adolescents were severely affected.

Grigorian (1992), who visited Armenia within a month after the quake, observed in the children considerable withdrawal, frequent nightmares, "silence" about parents who had died in the quake, and survivor's guilt. Eighty six percent of the children assessed six to eight weeks after the quake, displayed at least 4 out of 10 of the following symptoms: separation anxiety that intensified during the evening, school avoidance, refusal to be alone, conduct disorders, sleep disturbances, nightmares, frequent awakenings, regressive behaviors (i.e., enuresis), hyperactivity, concentration impairment, and somatic complaints (Kalayjian, 1995). The observations that were made approximately one year after the disaster (Miller, Kraus, Tatevosyan, & Kamenchenko, 1993) showed strong persistence of affective, cognitive, and behavioral posttraumatic symptoms in the quake children. They manifested numerous quake-related fears and guilt, social withdrawal and changed attitudes about people, life, and the future (e.g., distrust, pessimism, hopelessness) as well as frequent psychosomatic complaints, high irritability, and aggression.

According to Goenjian's (1993) information, one year after the quake in a randomly selected group of pupils, 56.0% met criteria for PTSD. One and half years after the disaster, 111 Armenian children (age 8-16) were assessed by DSM-III-R criteria for PTSD, and 78 (70.3%) were given this diagnosis (Pynoos, Goenjian, Tashjian, et al., 1993).

Post-trauma (PTSD) not only causes aforementioned problems but it can disturb the non-declarative memory (subconscious or motor memory, such as remembering how to ride a bicycle). This can show up as abnormal conditioned responses and the reliving of traumatic experiences when something happens to remind the sufferer of past (Bremner & Marmar, 1998).

Aftershocks differentiate earthquakes from other natural disasters. Since there is no clearly defined endpoint, the disruptions caused by continued tremors may increase psychological distress. Unlike other natural disasters (e.g., hurricanes and certain types of floods), earthquakes occur with virtually no warning. This fact limits the ability of disaster victims to make the psychological adjustments that can facilitate coping. This relative lack of predictability also significantly lessens feelings of control. While one can climb to higher ground during a flood, or install storm shutters before a hurricane, there is usually no advance warning or immediate preparation with earthquakes. Survivors may have to cope with reminders of the destruction (e.g., sounds of explosions, and the rumbling of aftershocks; smells of toxic fumes and smoke; and tastes of soot, rubber, and smoke).

Manifestation of PTSD in Children

The severity of children's reactions will depend on their specific risk factors. These include exposure to the actual event, personal injury or loss of a loved one, level of parental support, dislocation from their home or community, the level of physical destruction, and pre-existing risks, such as a previous traumatic experience or mental illness. Adults should contact a professional if children exhibit significant changes in behavior or any of the following symptoms over an extended period of time (Lazarus, Jimerson, & Brock, 2002).

- Preschoolers—thumb sucking, bedwetting, clinging to parents, sleep disturbances, loss of appetite, fear of the dark, regression in behavior, and withdrawal from friends and routines.
- Elementary School Children—irritability, aggressiveness, clinginess, nightmares, school avoidance, poor concentration, and withdrawal from activities and friends.
- Adolescents—sleeping and eating disturbances, agitation, increase in conflicts, physical complaints, delinquent behavior, and poor concentration.

Many children and adolescents will display some of the symptoms listed above. Most children are likely to recover in a few weeks with social support and the aid of their families. Other children, however, may develop PTSD, depression, or anxiety disorders. Parents of children with prolonged reactions or more severe reactions may want to seek the assistance of a mental-health counselor (Hamblen, 2006).

Along with associated symptoms, there are a number of psychiatric disorders that are commonly found in children and adolescents who have been traumatized. One commonly co-occurring disorder is major depression. Other disorders include substance abuse; other anxiety disorders such as separation anxiety, panic disorder, and generalized anxiety disorder; and externalizing disorders such as attention-deficit/hyperactivity disorder, oppositional defiant disorder, and conduct disorder (Hamblen, 2006).

Coping Mechanism

Children are psychologically different from adults, and lack well-developed cognitive and social skills and coping mechanisms. Children perceive the disaster differently and have different options for coping, different ways of expressing their reaction to the situation.

Research on children's coping following disasters is virtually nonexistent (Compas & Epping, 1993). It should prove useful to examine children's coping after disasters, because coping responses seem likely to influence the process of adapting to highly traumatic events (Korol, 1990; Rachman, 1980; Terr, 1989). Coping was considered fourth in the conceptual model because it is typically viewed as the product of the level of trauma suffered, personal characteristics (demographic characteristics, in the present case), and situational characteristics (i.e., access to supportive others; Compas & Epping, 1992). Based on a process-oriented model of coping, whereby the presence of symptoms presumably contributes to the use of coping strategies as well as being influenced by the use of these strategies, the relationship between PTSD symptoms and coping efforts was viewed as bidirectional (Compas, Worsham, & Ey, 1992).

The lack of prior research on coping with disasters made it difficult to predict how post-disaster coping responses might be categorized and how these categories might relate to PTSD symptoms. Research on children's coping with other stressful events (e.g., medical procedures, illness) seems at first glance to

provide a possible source of guidance, yet fundamental differences exist between disasters and these other events. In contrast to most medical stressors that have been studied, major disasters are highly novel events that influence multiple aspects of children's lives and produce ongoing disruptions. Consequently, patterns of coping following disasters may differ from those found in research on children's coping with familiar, discrete, time-limited events. Although research on children's coping with other stressful events (e.g., medical procedures, illness) has identified several categories of coping and relatively reliable differences in outcomes associated with the use of these categories (e.g., Peterson & Toler, 1986; Weisz, McCabe, & Dennig, 1994), it is not clear whether children use certain types of coping more than others following a major catastrophe, or at what point in the recovery process one might find differences in psychological distress associated with the use of different types of coping. Moreover, the specific coping strategies that comprise coping categories for other stressful events have often been de- fined inconsistently, even after a number of studies (Compas et al., 1992; Peterson, 1989). Thus, this study focused on identifying possible categories of coping following a major, catastrophic disaster and providing initial information about the relationship between these categories and PTSD symptoms.

The Social Support

Individuals with strong social support are generally able to cope more effectively with life stresses than those lacking such resources (Cohen & Wills, 1985). The usefulness of supportive relationships varies according to the stressor, the source of support, and the type of support offered (Wilcox & Vernberg, 1985). This suggests that different people in children's lives (e.g., parents, peers, and teachers) offer different types of social support, and these various types of support may fill specific needs following a disaster. Access to multiple sources of support seems preferable to single sources.

Parents are frequently cited as the single most important source of social support to elementary school-age children following disasters (Pynoos & Nader, 1988; Vogel & Vernberg, 1993). Parents serve the functions of modeling coping behavior, giving comfort and nurturance, and providing a sense of physical safety (Compas & Epping, 1993; Pynoos & Nader, 1988; Vernberg & Vogel, 1993). Research on children and disasters has focused more, however, on the relationship between parents and children's post-disaster symptomatology than

on social support from parents (e.g., McFarlane, 1987; Sullivan, Saylor, & Foster, 1991).

In addition to parents, the value of peers as support agents is often asserted in the disaster literature, especially in terms of decreasing children's sense of responding oddly to the disaster, decreasing isolation, and assisting coping efforts (Gillis, 1993; Pynoos & Nader, 1988; Vernberg & Vogel, 1993). Benefits of social support from peers have been demonstrated for several stressors (La Greca et al., 1995; La Greca & Skyler, 1991; La Greca & Spetter, 1992; Vernberg, 1990), but not specifically for disasters. Because massive relocation after Hurricane Andrew disrupted peer networks of many children, it is possible that this disruption deprived some children of an important source of social support.

Teachers are also potential sources of support to children following disaster (Klingman, 1987, 1993; Pynoos & Nader, 1988). For elementary school children, teachers may provide a sense of physical security that peers cannot. They also may serve the potentially important functions of providing factual information about the disaster and its consequences and reestablishing familiar roles and routines for children (Vernberg & Vogel, 1993). To our knowledge, however, specific contributions of teachers to children's post-disaster adjustment have not been studied schematically.

METHOD

Participants

Three hundred and eighty-two (n=382, 37% girls, and 63% boys) students of 6–10 grades (10-16 years) participated in this study. Sample was comprised of 142 girls and 240 boys of age ranging from 10 to 16 years with a mode of 15. The study was carried out in Bagh, a district of Azad Kashmir. District Bagh is comprised of three Tehsils (administrative divisions of a district) i.e. Bagh, Dhirkott, and Haveli. Participants were recruited from selected schools, public and private, (convenience sample) from all three tehsils. All the schools girl’s, boy’s, and coeducation had participated. Participating students were given a ten items questionnaire. Items were depending upon the diagnostic criteria for PTSD of DSM IV including recurrence of traumatic memory, irritability and outbursts of anger, avoidance (people) behavior, poor concentration, sleep disturbances/flash backs/ nightmares, exhaustion/chronic fatigue, depressive feelings accompanying guilt, and anxiety. Items were written in the language

(Urdu) comprehendible by the participating students. The same questionnaire can be found in appendix. It is cross translated into English language by two experts.

Procedure

Initially, 22 items were designed and rated by five judges to obtain content validity index. This 22-item scale was put to test and administrated on a sample of 36 children. After first factor analysis 18 factors were selected that show better factor loadings. The scale with 18 items was again administrated to a sample of 32 children. Second factor analysis revealed to 13 items with better factor loadings. Third administration of the scale with thirteen items was on sample of 37 children. Third factor analysis fetches 10 items with best possible factor loadings. Item-total statistics show there will be no significant improvement to scale by further reduction, as the item α (alpha) will be almost indifferent if any item was deleted. The inter-item correlations were consistent. This 10-item scale was finalized to be administrated on a sample of 382 children.

Content Validity Index (CVI)

Content validity was determined using Lynn (1986) and, Grant and Devis (1997) method. During judgment quantification stage, five experts in psychology had evaluated each item for representation and modifications.
Apropos Lynn's procedure:

$$\text{CVI} = \frac{Total\ score\ obtained\ for\ Likert\ scale}{\text{Total possible score for Likert scle}} \text{ x } 100$$

RESULTS

The scale (TSDS) was developed to tap resulting stress (PTSD) after a natural disaster. The scale was produced for Pakistani society and the main questionnaire is in Urdu. It has ten items that evaluate 10 to 16 years children and adolescents, males and females, for the presence of PTSD after they have experienced a natural or human created disaster.

Table 1 and 2 presents the CVIs and intra-class correlations to indicate the inter-rater reliability and variability. The confidence interval of 0.72-0.98 at 95% suggests that judges showed a consistency in responding to the items however, there is variance in absolute agreement.

Table 1
Content Validity Index (CVI)

Total obtained score	237
Total possible score	325
	0.72923
	72.9231

Table 2
Intraclass Correlation Coefficient

	Intraclass Correlation	95% Confidence Interval		*F* Test with True Value 0			
		Lower Bound	Upper Bound	Value	*df1*	*df2*	*Sig*
Single Measures	.437	.168	.876	11.098	4	48	.000
Average Measures	.910	.724	.989	11.098	4	48	.000

Table 3 has the KMO (Kaiser-Meyer-Olkin Measure of sampling Adequacy) and Bartlett's Test of Sphericity. Both the tests indicate the suitability of the data for structure detection. KMO's value of 0.85 suggests that a factor analysis may be useful on data. Whereas, the value on Bartlett's Test indicates that variables are related and structure detection may be useful.

Table 3
Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test

KMO	Bartlett's Test of Sphericity		
	Approx. Chi-Square	*df*	*Sig.*
.858	718.534	78	.000

Factor analysis using principal component analysis (PCA) method extracted 10 items that explain 87% of the variability with relatively high square loadings. Table 4 explains the total variance with their eigenvalues and squared loadings of items extracted. Table 5 presents the rotated component matrix that describes the factor loadings of extracted factors (items).

Table 4
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% Variance	Cumulative %	Total	% Variance	Cumulative %	Total	% Variance	Cumulative %
1	3.570	27.459	27.459	3.570	27.459	27.459	1.382	10.632	10.632
2	1.087	8.362	35.821	1.087	8.362	35.821	1.300	10.001	20.633
3	1.021	7.850	43.671	1.021	7.850	43.671	1.233	9.482	30.115
4	.947	7.284	50.955	.947	7.284	50.955	1.139	8.759	38.874
5	.926	7.122	58.077	.926	7.122	58.077	1.131	8.701	47.575
6	.871	6.701	64.779	.871	6.701	64.779	1.078	8.296	55.871
7	.775	5.965	70.744	.775	5.965	70.744	1.028	7.911	63.782
8	.716	5.508	76.251	.716	5.508	76.251	1.008	7.754	71.536
9	.691	5.314	81.565	.691	5.314	81.565	.991	7.621	79.157
10	.661	5.086	86.652	.661	5.086	86.652	.974	7.495	86.652
11	.620	4.767	91.419						
12	.572	4.402	95.821						
13	.543	4.179	100.000						

Table 5
Rotated Component Matrix

	Component									
	1	2	3	4	5	6	7	8	9	10
S1	.737	.166	.032	-.137	.335	.180	-.001	-.014	.106	.101
S2	.198	.139	.115	.061	.136	.081	.046	.094	.052	.920
S3	.120	.053	.090	.127	.011	.948	.053	.048	.073	.075
S4	-.037	-.010	.865	.013	-.056	.054	.257	.052	.126	.159
S5	.099	.144	.116	.130	.069	.072	.075	.079	.941	.050
S6	.778	-.025	.056	.279	-.190	-.001	.191	.129	.042	.177
S7	.079	.141	.082	.034	.092	.051	.062	.962	.077	.088
S8	-.005	.559	.218	.363	.231	.298	.187	.062	-.049	.014
S9	.354	.311	.607	.151	.255	.148	-.239	.106	.013	-.075
S10	.127	.123	.140	.105	.160	.065	.887	.066	.077	.042
S11	.104	.881	.011	-.007	-.012	-.027	.061	.127	.178	.140
S12	.087	.076	.047	.908	.101	.119	.081	.027	.133	.055
S13	.058	.051	.026	.118	.891	.008	.149	.092	.063	.123

Table 6 has the item-total statistics that indicate the values of scale mean, variance, and Cronbach's alpha will not be improved with any more reduction of factors. Especially, the Cronbach's alpha that is already calculated to be 0.7α will be reduced to .68 on the average.

Table 6
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
S2	19.49	24.749	.419	.194	.672
S3	19.98	24.994	.324	.127	.686
S4	19.75	24.836	.313	.120	.688
S5	19.52	24.061	.401	.170	.673
S6	19.88	24.968	.353	.152	.682
S7	19.72	24.030	.354	.142	.682
S10	19.61	24.008	.413	.187	.671
S11	19.38	23.702	.360	.154	.681
S12	19.62	24.138	.374	.171	.678
S13	19.36	24.395	.320	.124	.688

Table 7 has the reliability of the scale that is 0.7α (Cronbach's alpha), scale statistics with mean (21.81), standard deviation (5.39), and standard error of mean (0.27).

Table 7
Reliability Statistics

Cronbach's Alpha	Mean	Variance	Std. Deviation	Std. Error of Mean
.703	21.81	29.145	5.399	0.276

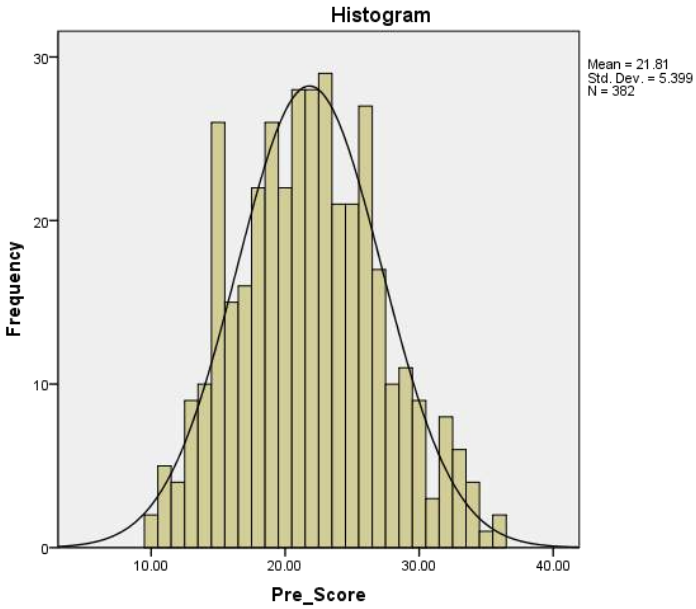

Figure 1: displays the histogram of distribution with normal distribution curve

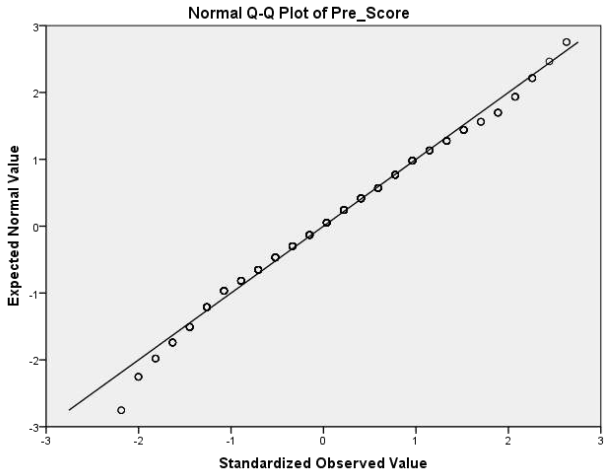

Figure 2: Q-Q plot indicating that the distribution (sample) was normal

Table 8 displays the test-re-test statistics. To establish the temporal stability same group of respondents were tested on the scale four weeks apart. Some, 311 respondents were able to make it. Test-re-Test reliability was .93α whereas the intraclass interval of .91-.94 indicates a significantly high consistency in results with 95% confidence. Figure: 3 is the Scatter Plot, a scatter plot defines the correlation between two values. Plot shows here few outliers, who are high scorers as well. This suggests that high scorers on trauma scale have a tendency of unpredictable response pattern.

Table 8
Reliability Statistics and Intraclass Correlation Coefficient

	Intraclass Correlation	95% Confidence Interval		F Test with True Value 0				Cronbach's Alpha
		Lower Bound	Upper Bound	Alpha	*df1*	*df2*	*Sig*	
Single Measures	.877	.848	.900	15.241	310	310	.000	.934
Average Measures	.934	.918	.948	15.241	310	310	.000	

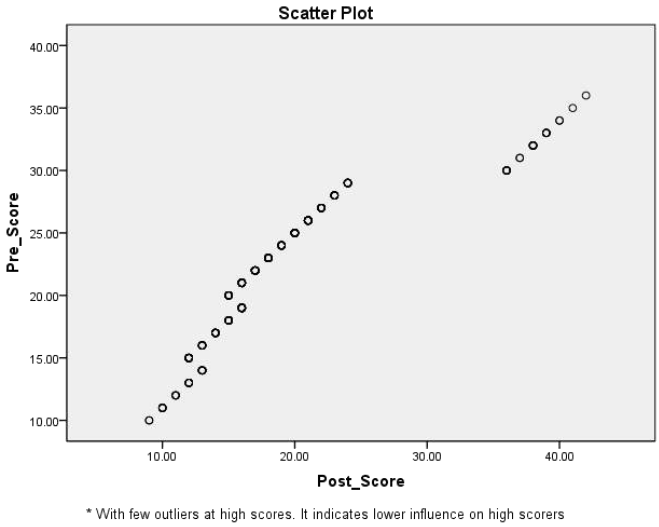

Figure 3: Scatter Plot

DISCUSSION

Natural disasters are psychologically devastating. People suffer from post-trauma even after years. Results of the researches (like Azarian, Skriptchenko-Grigorian, Miller, & Kraus, 1994; Yule, 2006) depict that even after years survivors show characteristics of post-trauma. Traumatic events may change the course of life considerably and are able to disturb the cognitive schemata.

Children in a disaster situation are more vulnerable because of multiple exposures to various distressing situations with low cognitive preparedness. Most of the experiences are new to them like sound of cracking and bustling earth, clouds of dust, and odors, breaking and demolishing houses, debris, and screaming and yelling of people around. They see people in excruciating pain and dying, the feeling of helplessness creeps in and the trust that adults can save them from dangers becomes shaggy. Later they experience the feeling of loss and separation. They do not know where they will live now because there is no house and some of significant family members are missing so, the home is broken as well. In the period of Acute Stress Disorder (aka shell shock) nobody is in the state of answering the questions popping up in the brain of a child. Therefore, they go without answers and explanations and this aids up to their anxieties.

During my stay in Kashmir, I came across an incident that shows phobia in its extreme state even in adults. Laborers were working in a college when a labor dropped a brick that landed on a steel container and made a loud noise. One student of 22 years of age attending his class on second floor jumped out of the window and broke his leg he said later that he thought it is the earthquake again. In that, college earthquake killed 250 students.

Flashback and recurrent memories are common characteristics of traumatic stress disorder. Not everyone passing through a traumatic situation develops PTSD. Apprehensions of stress and anxiety can be minimized with ventilation; this helps people regain a stabilized condition more steadily. This requires family and social support where a person can discuss the tragic moments, feelings, fears, and anxieties. Unfortunately, closed-minded people rule most of the area that was under the earthquake and emotional sharing especially between male and female family members and children is non-existent. In these circumstances, it was necessary to have a tool normalized in

their social setup (or close to) to understand emotional state of the children to be able to devise remedies.

TSDS scale has done well on statistical analyses. Scale has been finalized with 10 items on it. These items were factor analyzed and item-total statistics suggested these are possibly the best selection of items. Scale delivers (Table 7) reliable (.7α) results with 95% confidence. These items cover (Table 4) 87% of the population variability. Scale shows a good temporal stability (.93) (Table 8) when tested again after four weeks on the same respondents.

TSDS, attempts to classify children whether they are under traumatic stress. Scale was not evaluated for individual characteristics indicated in DSM. However, in an acute situation scale helps readily to understand a child's needs and to establish further course of treatment and support.

Earthquake is not the only factor responsible for provoking and aggravating psychopathologies in survivors. There are numerous elements like personality characteristics, social architecture, and role distribution between genders, cultural and religious learning, makes individual vulnerable and prone to stress, PTSD and other psychopathologies. Escaping death in a terminal disease, chronic ailment or death of a loved one, are the reasons may produce PTSD.

Communities with a closed social system, especially where members of the community do not have the idea of appropriate gender identity, are prone to stress and other psychological disorders. When the individuals of those communities face some sort of a trauma situation, the acute stress pushes the submissive members of the community into the PTSD. Children and adolescents, especially girls, are the most vulnerable members of such closed communities. Following incident is enough to depict the situation well. We approached a nearby community to extend our rehabilitation services to the survivors. Our community movers visited the community two days earlier explaining our program and activities we perform. On the particular day, we reached there to find an exclusive male gathering. I asked the community members present there, 'why women not accompanied you?' 'They are not allowed to step out and attend any such meetings,' was the reply. 'Even if it was organized to help them rehabilitate emotionally,' I explored. 'Yes, even then,' they said.

Those children and adolescents found high on anxiety and depression show a different causal factor when explored further (we found it qualitatively

but unfortunately, we do not have enough data to prove it statistically) that is rooted into the social structure and orthodox social/cultural and religious teachings. Situation is demanding and non-friendly for both, boys and girls, however, girls show adjustment problems more than boys do. This area requires further explorations and some psychosocial rehabilitation program can be devised to rescue the poor souls if results agree with our speculations.

Short-Comings

Scale is lacking the convergent and discriminant validities. Due to operational difficulties, it was impossible to acquire necessary data to validate the scale in those circumstances (after earthquake. However, it is intended to carryout in future study on a relatively larger sample.

REFERENCES

Anait, A., Vitali, S.-G., Miller, T.W., & Kraus, R. F. (1994). Childhood trauma in victims of the Armenian earthquake. *Journal of Contemporary Psychotherapy, 24* (2), 77-85.

Azarian, A. G., Skriptchenko-Gregorian, V. G., Miller, T. W., & Kraus, R. F. (1994). Childhood trauma in victims of the Armenian earthquake. *Journal of Contemporary Psychotherapy, 24* (2), 77-85.

Azarian, A. G., & Skriptchenko-Grigorian, V. G. (1997). Traumatization and stress in children and adolescents of natural disasters. In T.W. Miller (Ed.), *Children of Trauma.* Madison, CT.

Bremer, J. D., & Marmar, C. R. (1998). *Trauma , memory, and dissociation* (1st ed.): American Psychiatric Press, Inc. Washington, DC.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98* (2), 310-357.

Compas, B. E., Worsham, N. L., & Ey, S. (1992). Conceptual and developmental issues in children's coping with stress. In A. M. LaGreca, L. J. Siegel, J. Wallander, & C. E. Walker (Eds.), *Stress and coping in child health* (pp. 7-24). New York: Guilford Press.

Gillis, H. M. (1993). Individual and small-group psychotherapy for children involved in trauma and disaster. In C.F. Saylor (Ed.), *Children and disasters* (pp. 165-186). New York: Plenum.

Goenjian, A. (1993). A Mental health relief programme in Armenia after the 1988 earthquake. *British Journal of Psychiatry, 163,* 230-239.

Goenjian, A. K., Pynoos, R. S., Steinberg, A. M., et al. (1995). Psychiatric co-morbidity in children after the 1988 earthquake in Armenia. *Journal of the American Academy of Child and Adolescent Psychiatry, 34* (9), 1174-1184.

Grant, J.S., & Devis, L.L. (1997). Focus on qualitative methods selection and use of content experts for instrument development. *Research in Nursing and Health, 20,* 269-274.

Grigorian, H. M. (1992). The Armenian earthquake (pp. 157-167). In L.S. Austin (Ed.), *Responding to Disaster,* pp157-167. Washington, DC: American Psychiatric Press.

Hamblen, J. (1998). Practice Parameters for the Assessment and Treatment of Children and Adolescents with Posttraumatic Stress Disorder. *Journal of the American Academy of Child and Adolescent Psychiatry, 37,* 10 supplement.

Hamblen, J. (2006). *PTSD in children and adolescents. United States Department of Veteran Affairs National Center for PTSD.* http://ncptsd.va.gov/facts/specific/fs_children.html.

Kalayjian, A. S. (1995). *Disaster and Mass Trauma.* Long Branch, NJ: Vista Publishing.

Klingman, A. (1987). A school-based emergency crisis intervention in a mass school disaster. *Professional Psychology: Research and Practice, 18,* 604-612.

Klingman, A. (1993). School-based intervention following a disaster. In C.E. Saylor (Ed.), *Children and disasters* (pp. 187-210). New York: Plenum Press.

Korol, M. S. (1990). *Children psychological responses to a nuclear disaster in Ohio.* Unpublished doctoral dissertation, University of Cincinnati.

La Greca, A. M., & Skyler, J. S. (1991). Psychological issues in IDDM: A multivariate framework. In P. McCabe, N. Schneiderman, T. Field, & J. S. Skyler (Eds.), *Stress, coping, and disease* (pp. 169-190). Hills- dale, N J: Erlbaum.

La Greca, A. M., & Spetter, D. S. (1992). Psychosocial aspects of child- hood diabetes: A multivariate framework. In N. Schneiderman, P.McCabe, & A. Baum (Eds.), *Stress and disease processes: Perspectives in behavioral medicine* (pp. 249-274). Hillsdale, N J: Erlbaum.

La Greca, A. M., Auslander, W., Greco, E., Spetter, D., Fisher, E. B., & Santiago, J. V. (1995). Get by with a little help from my friends: Adolescents support for diabetes care. *Journal of Pediatric Psychology, 20,* 449-476.

Lazarus, P. J., Jimerson, S. R., & Brock, S. E. (2002). Natural disasters In S. E. Brock, P. J. Lazarus, & S. R. Jimerson (Eds.), *Best practices in school crisis prevention and intervention,* 435-450.

Lynn, M. R. (1986). Determination and Quantification of content validity. *Nursing Research, 35,* 382-385.

McFarlane, A. C. (1987). Posttraumatic phenomena in a longitudinal study of children following a natural disaster. *Journal of the American Academy of Child Psychiatry, 26,* 764-769.

Miller, T. W., Kraus, R. F., Tatevosyan, A. S., & Kamenchenko, P. (1993). Post-traumatic stress disorder in children and adolescents of the Armenian earthquake. *Child Psychiatry and Human Development, 24,* 115-123.

National Institute of Mental Health. (2000). *Helping children and adolescents cope with disasters: Fact sheet* [On-line]. Available: http://www.nimh.nih.gov.

Peterson, L., & Toler, S. M. (1986). An information seeking disposition in child surgery patients. *Health Psychology, 5,* 343-358.

Peterson, L. (1989). Coping by children undergoing stressful medical procedures: Some conceptual, methodological, and therapeutic issues. *Journal of Consulting and Clinical Psychology, 57*, 380-387.

Pynoos, R. S., and Nader, K. (1988). Psychological first aid and treatment approach to children exposed to community violence: Research implications. *Journal of Traumatic Stress, 1*, 445-473.

Pynoos, R. S., Goenjian, A., Tashjian, M., et al. (1993). Post-traumatic stress reactions in children after the 1988 Armenian earthquake. *British Journal of Psychiatry*, 239-247.

Rachman, S. (1980). Emotional processing. *Behavior Research and Therapy, 24,* 685-688.

Sullivan, M. A., Saylor, C. F., & Foster, S. C. (1991). Post-hurricane adjustment of preschoolers and their families. *Advances in Behavior Research and Therapy, 13*, 163-172.

Terr, L. C. (1989). Treating psychic trauma in children: A preliminary discussion. *Journal of Traumatic Stress, 2* (1), 3-20.

Vernberg, E. M., & Vogel, J. M. (1993). Interventions with Children after Disaster. *Journal of Clinical Child & Adolescent Psychology, 22* (4), 485-498.

Vernberg, E. M. (1990). Psychological adjustment and experiences with peers during early adolescence reciprocal, incidental, or unidirectional relationships? *Journal of Abnormal Child Psychology, 18*, 187-198.

Wilcox, B. L., & Vernberg, E. M. (1985). Conceptual and theoretical dilemmas facing social support. In I. G. Sarason & B. R. Sarason (Eds.), *Social Support: Theory, research and Applictions.* Maritinus Nijhoff, The Netherlands.

Weisz, J. R., McCabe, M. A., & Dennig, M. D. (1994). Primary and secondary control among children undergoing medical procedures: Adjustment as a function of coping style. *Journal of Consulting and Clinical Psychology, 62*, 324-332.

Yule, W. (2006). School-Based Multi-systemic Interventions for Mass Trauma. *Child and Adolescent Mental Health, 11*(2), 123-124.

Appendix

TSDS Scale (Questionnaire)

Instructions:

Below are given some statements depicting some experiences/feelings. Read them carefully and state whether you feel similarly for never, sometimes, often, or always. Please give your honest responses and do not leave any statement unanswered.

1. The mental images of disaster create same dreadful effects on me as were on the day of the disaster
2. People say that I am hotheaded these days
3. I don't feel like meeting others these days
4. I cannot decide what to do next these days
5. I am having nightmares these days
6. These days, I feel that my elders will not be able to save me if I meet an accident
7. I do not feel hungry these days
8. I cannot stay alone because it scares me these days
9. I feel pain and muscle tension in my head, neck, and shoulders these days
10. I wonder these days, why I am alive when my loved ones are no more with me

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TRANSLATION AND ADAPTATION OF EYSENCK PERSONALITY QUESTIONNAIRE (JUNIOR) AND ITS VALIDATION WITH LABORER ADOLESCENTS

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ABSTRACT

The present research aimed at translation, adaptation, and validation of the Eysenck Personality Questionnaire (Junior) (Eysenck & Eysenck, 1970) with laborer adolescents. After translation in first phase, sample of 60 adolescent students ranged from 13- 17 years (M=15.7) was selected from Rawalpindi and Islamabad. The re-test reliability after 15 days determined the significant correlation coefficients for the all subscales of Urdu EPQ-(Junior), showing consistency of responses in the same language. In phase II Urdu EPQ (Junior) was administered on 200 male laborer adolescents with the age ranging 13- 17 years (M= 15.39; SD= 1.55) from different areas of Rawalpindi/ Islamabad to establish the psychometric properties of the scale. The findings revealed satisfactory Cronbach's alpha coefficients for all subscales of EPQ (Junior) Urdu and some significant findings with demographic variables as education.

Key words: Extraversion; Neuroticism; Psychoticism; Lie; Laborer adolescents

INTRODUCTION

All around the world, approximately 350 million children are involved in labor work (Human Rights Watch, 2006). International Labor Organization (as cited in Ahmad, 2007) estimated that there are 21.6 million children, aged between 5 and 16 years, working in South Asia out of a total of 300 million

children in this age group. In Pakistan 40 million children are in this age group out of which 3.3 million children are involved in labor work.

Labor work by young adolescents is a universal problem and need immediate attention. Children, who are the victims of labor, lived a life of deprivation, neglect, and exploitation. Their basic right to education, health, recreation, parental love, happy environment, and a childhood are violated and compromised. Their work conditions are especially severe, often not providing the stimulation for proper physical psychological and moral development. With all respect these children are at the disadvantaged end. They are also more vulnerable to develop the maladaptive pattern of behavior with over all damaged personalities. In the present study it is being effort to translate and adapt the Eysenck Personality Questionnaire (Junior) (Eysenck & Eysenck, 1970) that will help to study and analyze the different personality trends among these children.

Personality is the complex organization of different traits e.g., aggressive, assertive, unsympathetic, manipulative, achievement-oriented, sociable, irresponsible, dominant, impulsive, risk-taking, expressive, active, anxious, depressed, guilt feelings, low self-esteem, tense, moody, hypochondriac, lack of autonomy, and obsessive (Eysenck & Gudjonsson, 1989; Hundleby & Connor, 1968). This paper is an attempt to explore the nexus between personality traits and environmental hazardous within the context of the child labor.

Trait approaches of personality emphasize the uniqueness of individual personality, Allport (as cited in Schultz, 2001) stated that "we reflect both our heredity and environment" (p. 247). Genetic predisposition provides the personality with raw material such as physique, intelligence, and temperament that may be shaped, expanded, or limited by the condition of our environment (Pervin & John, 2001, p.267). In this way all the trait theorists invoke both personal and situational variables to denote the importance of both genetics and learning (Cooper, 2002). One such trait theory presented by Eysenck (1970) is based primarily on physiology and genetics. Although he was a behaviorist who considered learned habits of great importance, he considered personality differences as growing out of our genetic inheritance (Sharma, Sharp, Walker, & Monson, 2008). He was, therefore, primarily interested in what usually called temperament. Eysenck's original research found two main dimensions of temperament: Neuroticism and extraversion-introversion. Later, when he began to study patients in mental institutions, he added another dimension to his

temperament scale: Psychoticism (Boeree, 1998; Hollin, 1992; Matthews, Deary, & Whiteman, 2003).

Perez (1986) emphasized that Eysenck's research showed that these nervous people tended to suffer more frequently from a variety of "nervous disorders" that is called neuroses. But there is need to understand that he was not saying that people who score high on the neuroticism scale are necessarily neurotics but they are more susceptible to neurotic problems (Eysenck, 1989; Hollin, 1992; Link & Mealey, 1992). Many other researchers and psychologists have developed theories similar to Eysenck's and have also made uses of factor analysis research techniques to extend the study of different problematic behaviors for example aggressive, conduct, criminal behavior (Anastasi, 1997; Darley, Glucksberg, & Kinchla, 1991; Hollin, 1992; Link & Mealey, 1992; Matthews et al., 2003).

Eysenck (1975) hypothesized that extraversion-introversion is a matter of the balance of "inhibition" and "excitation" in the brain itself. Someone who is extraverted, he (1975) hypothesized, has good, strong inhibition: When confronted by traumatic stimulation — such as a car crash — the extravert's brain inhibits itself, which means that it becomes "numb," you might say, to the trauma, and therefore will remember very little of what happened. After the car crash, the extravert might feel as if he had "blanked out" during the event, and may ask others to fill them in on what happened. Because they don't feel the full mental impact of the crash, they may be ready to go back to driving the very next day (Andrews & Bonta, 1994).

It is an empirical fact that a large proportion of the total common variance produced by the observed correlations between these traits can be accounted for in terms of these two factors. Then Eysenck (as cited in Carrasco, Barker, Tremblay, & Vitaro, 2006) hypothesizes that a third dimension of personality could be postulated which was independent of extraversion and neuroticism and that is psychoticism.

There is a growing consensus about the validity of human personality traits as important dispositions toward feelings and behaviors (Matthews et al., 2003). Here we examine the Eysenck Personality Questionnaire-Junior, which includes the traits of neuroticism, extraversion, and psychoticism, and a lie scale (Eysenck & Eysenck, 1985). An important part of the validation of any trait-based model of personality and its associated measurement instrument is to

investigate its applicability to other cultures. This tends to be done in two ways: Emic and etic. Emic research typically uses the lexicon of the local culture to investigate the structure and content of the personality-related terms (Saucier & Goldberg, 2001). Etic research applies personality measures devised in one culture to new cultures and asks whether they show the same psychometric structure and reliability and validity (Mccarthy & Hulsizer, 2002). A large amount of etic research has been completed on the Eysenck Personality Questionnaire (Barrett & Kline, 1982; Carrasco, Barker, Tremblay, & Vitaro, 2006; Chapman & Kwapil, 1994; Cheung & Cheung, 2003; Eysenck & Gudjonsson, 1989; Van, De Bruyn & Janssens, 2007). The present research was also an effort with etic approach to establish the psychometric structure, reliability, and validity in Urdu language.

Generally, its psychometric structure has been well-reproduced in at least 34 countries (Tiwari, Singh, & Singh, 2009; Sharma et al., 2008). There is great interest in discovering the personality traits contributions ranging from common problematic behavior to complex psychological diseases (e.g., Davey et al., 2005; Lohmueller, Pearce, Pike, Lander, & Hirschhorn, 2003; Sharma et al., 2008) and developmental problems (Carrasco et al., 2006; Van et al., 2007). Moreover, a likely useful route to discovering the genetic contributions to common disorders is to examine the genetic bases of quantitative traits which act as risk factors for them (Flint & Mott, 2001).

Child labor is, generally speaking, work for children that harms them or exploits them in some way (physically, mentally, morally, or by blocking access to education and normal healthy growth). The last survey in 1996 figured out 3.3 million child laborers in Pakistan out of which 2.4 million (73 percent) were boys and 0.9 million (27 percent) were girls. The provincial distribution indicated that the volume of child labor in the Punjab was about 1.9 million, which was about three-fifth (60 percent) of total child labor in the country. The NWFP showed about one million child laborer while lowest figure was for Balochistan because of the lesser number of households reporting child labor (Ahmad, 2007)**.**

Child labor is an overwhelmingly issue in Pakistan as all over the world. In Pakistan, a large number of children are involved in different labor work as mentioned earlier, not getting education properly but no scientific study to evidate the behavioral issues like crimes or delinquency of these children. Boys are more likely to work than girls, and older children are much more likely to be employed than their younger siblings (Child Labor in Pakistan, 1996).

The International Labor Organization's goal with regard to child labor is the progressive elimination of all its forms worldwide. The worst forms of child labor, which include hazardous work, commercial sexual exploitation, trafficking of children, and all forms of slavery, among others, should be abolished as a priority. Millions of children aged 5–15 years around the world work full time, and in some areas of countries such as India and Pakistan families routinely "bind over" their children to work as a means of obtaining income (Dannefer, 2004; International Labor Organization, 1999). In such cultures where major life transitions are institutionalized to occur at earlier ages, we may expect to observe the accelerated development of personality traits associated with maturity, such as conscientiousness, agreeableness, and emotional stability (Roberts, Wood, & Smith, 2005).

John and Francis (1995) studied the personal attitude of adolescents toward truancy and found that some of the personality features like Psychoticism, extraversion, and neuroticism involved in this behavior and negatively related with lie. Lack of, or poor education, reduces their hopes for a better future. Child labor limits children's access to proper education. The problem is exacerbated as many child laborers are from rural families who constitute two-thirds of the world's poorest people. The present study will be an attempt to explore the different personality traits of adolescents involved in child labor. The knowledge of these personality traits can help to reveal their biological predispositions that can put them on risk for the development of unhealthy personality and maladaptive pattern of behavior.

Keeping above-mentioned facts and views in mind, it was decided to study the personality traits of adolescents in child labor. The inborn tendencies along with unfortunate environment help us to know the root causes of their different behavioral problems and take subsequent decisions to bring relief in their life and make them the useful and productive part of the society. But before taking any step, it is required to explore the nature of different personality feature which may put them at risk for normal development.

The area of personality study in Pakistan has been ignored and inadequate number of researches with respect to personality traits in young adolescents in Pakistan. It may be explained by the difficulty faced by the researchers in the instrument used to measure the personality traits of the people under the age of 18 years. To study personality number of instruments are available in Pakistan with the good translation and adaptation and with well

established psychometric properties i.e., the Urdu versions for the Minnesota Multiphase Personality Inventory-2 (MMPI-2) (Saeed, Tahir, & Jahangir, 2001), NEO-PI-R (Chisti, 2002), and California Psychological Inventory or CPI (Ahmed, Haque, & Kamal, 1994).

As all instruments can only be used with adults. So before planning any kind of scientific research it was important to translate and adapt a personality measure which can be used with the adolescents under eighteen years of age. The scale used by the present researcher EPQ-(Junior) is a relatively good personality measure for young adolescents as it gives full picture of personality functioning (Flint & Mott, 2001; Levinson, 2006; Sharma et al., 2008)**.**

The present study was conducted to achieve the following objectives:

1. To translate and adapt the Eysenck Personality Questionnaire (Junior) to assess the personality traits of the laborer adolescents.
2. To establish the psychometric properties of scale.
3. To explore different personality traits i.e., Extraversion, Neuroticism, Psychoticism, and Lie among laborer adolescents.
4. To find out the difference between laborer adolescents with different education level, in the personality traits i.e., Extraversion, Neuroticism, Psychoticism, and Lie among laborer adolescents.
5. To find out the difference between type of labor, in personality traits i.e., Extraversion, Neuroticism, Psychoticism, and Lie among laborer adolescents.

METHOD

Measures

First of all the copyright to use this inventory was obtained from the publishers of Educational and Industrial Testing Service (EdITS) San Diego, California. This study was conducted to translate and adapt the inventory according to culture so utility of the inventory for the non English speaking respondents will be increased. This study was constituted on two phases. In phase I, translation, adaptation, and cross language validation was done. In phase II, the psychometric properties of the scale were established. Before writing the details about the translation and adaptation a brief description of EPQ (Junior) is presented below.

Eysenck Personality Questionnaire (Junior) was developed by Eysenck and Eysenck (1970). It is 81 items scale which assesses the three dimensions of

personality i.e., Extraversion, Neuroticism, and Psychoticism. This scale has one added dimension of Lie which is the indicator of dissimulation among adolescents. It is a dichotomous scale on which respondent has to express his/her agreement or disagreement with the statement in the form of "yes" or "no". Items were scored like 0 standing for "no" and 1 standing for "yes". The higher the score of respondent on each sub scale means having those personality traits.

Phase I: Translation, Adaptation and Cross Language Validation of Eysenck Personality Questionnaire (Junior)

The aim of this study was to obtain Urdu version of the English instrument that is conceptually equivalent in the targeted language /culture. The major intention of this process is to enable the instrument equally natural and acceptable and should practically perform equally in both languages source language (English) and target language (Urdu). The focus is on cross-cultural and conceptual equivalence rather than on linguistic/literal equivalence. A well-established method to achieve this goal is to use forward-translations and back-translations (Brislin, 1976; Hambleton, 1994). So the translation and cross language validation of EPQ (junior) has been accomplished in four steps.

Step 1: Forward translation

The bilingual experts were one Associate Professor of English with the qualification of PhD, teaching at National University of Modern Languages (NUML), Islamabad, Pakistan; two Assistant Professors of English with the qualification of M.A English teaching at Gordon College, Rawalpindi; two students enrolled in M.Phil/PhD program of Psychology, Quaid-i-Azam University, Islamabad; and one bilingual expert who has done his master in Urdu and Diploma in English language from National University of Modern Languages, Islamabad, Pakistan. The bilingual experts were instructed to translate each item according to the proper Urdu language comprehension, without eliminating the items. They were also requested to identify those items which they think are not relevant to Pakistani culture and were asked to suggest best alternatives for such items.

Step 2: Expert panel

In a committee approach each translated item was analyzed and best translated item was selected by the mutual consensus of committee members.

The committee approach consists of one Assistant Professor of Psychology, the supervisor of the study, the Professor of Psychology and the Researcher (M.Phil student) herself. During the process of adaptation some required changes were made in the original inventory according to Pakistani culture as suggested by bilingual experts. These changes were necessary because English version was developed according to the culture of British society. For example, the item No.33 of EPQ (junior) "Do you think water skiing would be fun? As the water skiing is not common in Pakistan, so it was difficult to comprehend this item by the target population. Usually people are more familiar with rowing or boating as water sport, that is why item was adapted and back translated as "Do you think boating would be fun." The expert panel may question some words or expressions and suggest alternatives.

Step 3: Back-translation

The Urdu translated version of EPQ (junior) was given to five independent bilingual translators. Procedure was same as followed in the forward translation. `The back translations of the Urdu version and original EPQ (junior) were scrutinized by the same penal experts. Finally, the selected translated items were arranged in the same order given in the original inventory.

Study I: Cross language validation

To measure the effectiveness of inventory in the Urdu language, a cross language validation is done. Cross language validity of the EPQ (junior) is established in two separate studies. In study 1 the cross language validity of the instrument is established on general population adolescents, although this was not the target sample of research. Ultimate purpose to select this sample was to check the cross language validity of instrument. It was not possible with the adolescents involved in labor work because they have no comprehension of the English language.

Sample

For the cross language validation the sample of 60 adolescents ranged from 13- 17 years with the mean age of 15 years was selected. These were the adolescents who have the proper comprehension of both languages i.e., Urdu and English. The minimum qualification criterion of sample was O level. These adolescents were selected from three private schools of Rawalpindi, Pakistan.

The schools were: Ideal Education System Rawalpindi, Pakistan (*n*=20), SLS Secondary Branch Rawalpindi, Pakistan (*n*= 16), and City Grammar School Rawalpindi, Pakistan (*n*= 24).

Procedure

The whole sample was divided into four groups. In the first trial two groups comprising of 30 adolescents 15 in each group were given the original inventory of Eysenck Personality Questionnaire (junior) and their responses were taken. Similarly the other two groups of 30 adolescents were given the translated version of Eysenck Personality Questionnaire (junior) and their responses were taken. In the second trial after the fifteen days the same sixty students were contacted to made their responses again, but in the second trial the first group of 15 adolescents were given Urdu version of Eysenck Personality Questionnaire (junior) with the same instructions but the second group of fifteen adolescents were given again the original inventory of Eysenck Personality Questionnaire (junior). Regarding the last two groups, they were given original inventory of Eysenck Personality Questionnaire (junior) and second group was given translated version of Eysenck Personality Questionnaire. This exercise was geared to identify the point of equivalence or discrepancy between Urdu and English version of the questionnaire.

Participants were randomly assigned to the four groups: Urdu-Urdu retest, Urdu-English retest, English-Urdu retest and English-English retest. They were all requested to give their responses with the same instructions. These groups were made to control the experiences of learning effect that may took place due to administration of Urdu and English tests on two weeks apart retesting.

Results

In order to determine cross-language validity and test-retest reliability of the inventory, correlation coefficients of four groups between the scores of two administrations have been carried out. Moreover, the following results also represent the comparisons of retest reliability with original Eysenck's retest scores with one month interval.

Comparison of English (Original) and Urdu versions of EPQ-(Junior)

The test-retest reliability and the cross language validity of the four sub-scales have been determined by calculating correlations between two administrations. The results are given in the following tables.

Table 1
Retest reliabilities of Urdu and English version of four subscale of EPQ (junior) (N= 60)

EPQ-(junior) subscale	GP.I (UU) (n=15)	GP.II (UE) (n=15)	GP.III (EU) (n=15)	GP.IV (EE) (n=15)
Extraversion	0.90**	0.88**	0.87**	0.84**
Neuroticism	0.89**	0.87**	0.87**	0.85**
Psychoticism	0.88**	0.80**	0.82**	0.81**
Lie	0.88**	0.87**	0.86**	0.83**
EPQ (J) Total	0.91**	0.89**	0.87**	0.86**

*$p \leq .05$, **$p \leq .01$ *Note:* UU = (Urdu- Urdu), UE = (Urdu - English), EU = (English - Urdu), EE = (English - English)

Table 1 shows test retest of the four groups (Urdu-Urdu, Urdu-English, English-Urdu, and English-English). Correlations for all four subscales of EPQ (junior) are positive and significant. The correlation coefficient of extraversion for four groups ranged from .84 to .90, for Neuroticism correlation coefficient for four groups ranged from .85 to .89, for Psychoticism correlation coefficient ranged from .80 to .88 and for Lie correlation coefficient ranged from .83 to .88 which indicates high stability of responses over the time, as well as cross language validity of the Urdu and English versions. The correlation coefficients of total EPQ (Junior) for four groups ranged from .86 to .91 which indicates high stability of four subscales over time, as well as cross language validity of the Urdu and English versions. Among the all four groups' correlation value of Urdu-Urdu retest group is higher as compared to other three groups. The reason for this higher correlation value may be because of the practice effect in the twice administration of same language inventory and over all understanding of the scale because of Urdu being natural language of Pakistan. Over all these results indicate the strong evidence of cross language validity or empirical equivalence of the original and translated versions of EPQ (junior). Moreover, the results also provide the evidence that both tests are hypothetically similar.

Study II: Retest Reliability on Laborer Adolescents

In this study the test re-test reliability, of the Urdu version of EPQ (Junior) is determined. Independent sample of 15 adolescents is selected with the similar demographics required for the main study.

Sample

In the present study, the sample constituted on the adolescents boys involved in labor work. These children usually do not attend full time school so their comprehension for English language is very poor or almost zero. For the language validation of EPQ (junior) Urdu Version, the sample constitutes 15 adolescents' boys with age ranged from 13- 17.11 years.

Procedure

This adolescent group was selected from different workshops, restaurants, beggars, and trash collectors of Rawalpindi. In the first trial these adolescents were given the Urdu version of EPQ (junior) and their responses were taken. After the fifteen days same inventory (Urdu version) was administered on the same subjects for their responses. To check the test-retest reliability of the responses of the total and four sub-scales of Urdu version of EPQ (junior) the correlation coefficient was determined.

Table 2
Retest reliabilities of the subscales of EPQ (junior) Urdu version (N= 15)

Subscales of EPQ (junior)	Retest reliability of present study	Retest reliability of Eysenck's study*
Extraversion	0.91**	0.78
Psychoticism	0.90**	0.69
Neuroticism	0.90**	0.75
Lie	0.89**	0.75

**$p \leq .01$ * (Source: Eysenck & Eysenck, 1970, p. 16)

Table 2 shows that test re-test reliability of total and subscales of EPQ (junior), is positive and significant. The correlation coefficients of four subscales, were ranged from .89 (lie) to .91 (extraversion). This high correlation is the

evidence of consistency of responses in the same language. Furthermore Table 2 represents the retest reliability scores of Eysenck's study on 190 adolescents of age ranged 12-14 years with one month of interval (Eysenck & Eysenck, 1970, p. 16). It has been observed reliability scores of Eysenck's study for all four subscales are low as compared to the present study findings. One reason may be the time interval as it was 15 days only in present study.

Phase II: Reliability and Validity of EPQ (Junior) Scale on Laborer Adolescents

Sample

In order to determine the further psychometric properties of the scale, the EPQ (Junior) Urdu version was administered on the sample of 200 adolescents involved in child labor. A sample of 200 male adolescents with the age ranging from 13- 17 years (*M*= 15.39; *SD*= 1.55) from different areas of Rawalpindi/ Islamabad was selected. About 55% of sample of the laborer adolescents had an education level up to primary (*n*=110) and rest of 45% had primary to matric (*n*= 90). No illiterate individual was included in sample. Participants were selected by using purposive sampling technique. The sample of the present research was constituted on those adolescents working in workshops (*n*= 65), general stores (*n*= 47), restaurants (*n*= *40*), beggars (*n*= 23), and trash collectors (*n*= 25).

Procedure

The scale was administered individually. The participants were approached at their work places and were instructed to read each statement carefully and respond honestly. As most of the subjects were having difficulty to read, therefore, they were assisted by the researcher to answer on scale. Few subjects have problems in understanding of statements so they were explained by the researcher till a real answer was obtained.

RESULTS

Item Total Correlations

The Item total correlation for each subscale of EPQ (Junior) indicated that most of the items for EPQ (Junior) have significant positive correlation with each of the total subscale score indicating internal consistency of all four subscales. The item total correlation for the subscale of Extraversion ranges from 0.73 –

0.89. The item total correlation for the subscale of Neuroticism ranges from 0.66 – 0.75. The item total correlation for the subscale of Psychoticism ranges from 0.68 – 0.85. The item total correlation for the subscale of Lie ranges from 0.65 – 0.82.

Cronbach's Alpha coefficient

The Cronbach's alpha coefficient for the subscales of EPQ (Junior), which came out to be .72 for the subscale of Extraversion, 0.69 for the subscale of Neuroticism, 0.71 for the subscale of Psychoticism, and 0.68 for the subscale of Lie which is quite good and satisfactory.

Interscale Correlation

Table 3
Inter scales correlations Subscales of EPQ (Junior) Urdu version (N=200)

Subscales	Extraversion	Neuroticism	Psychoticism	Lie
Extraversion	-	-0.49**	0.46**	0.14*
Neuroticism	-	-	0.31**	0.09
Psychoticism	-	-	-	0.18*

*$p \leq .05$ **$p \leq .01$

It is observed from Table 3 that there are significant positive correlations among different subscales of EPQ (Junior) — Urdu version. It is clear from the result that in all the four subscales, extraversion is negatively related with neuroticism while all other scales are positively correlated with each other. It is observed neuroticism and lie show low non significant correlation, may suggest that there was little disposition or tendency to dissimulate among adolescents (Eysenck & Eysenck, 1973).

Table 4
Means and standard deviations of subscales of EPQ (J) Urdu version (N= 200)

Scales	No of Items	Score range	*M*	*SD*
Extraversion	24	0-24	19.51	2.29
Neuroticism	20	0-20	12.76	2.19
Psychoticism	17	0-17	14.85	2.03
Lie	20	0-20	9.1	2.07

To explore different personality traits i.e., Extraversion, Neuroticism, Psychoticism, and Lie among laborer adolescents the mean scores and standard deviations of the total sample on EPQ (Junior) - Urdu version was computed. It is observed from the results that mean score of the respondents on the measure of Extraversion is highest, followed by Psychoticism. Third highest mean score was obtained on the measure of Neuroticism and least score on the measure of Lie. It means that laborer adolescents have more extravert type of personality. Similarly it can be seen in the figure 2.

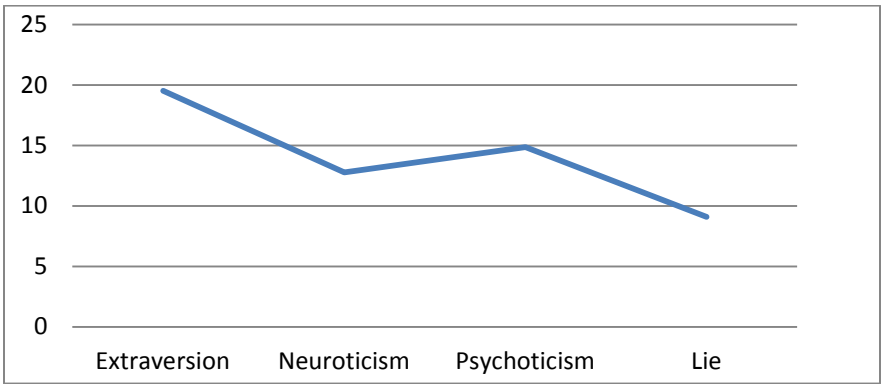

Figure 2: Mean scores of laborer adolescents on subscales of EPQ (Junior) Urdu version. *Note*: X axis indicate the personality traits and Y axis indicate the mean values.

Demographic Variables and Personality Traits

The demographic information collected included education and type of labor. In order to find out the effect type of labor on Personality traits one way ANOVA was computed. Similarly to see the effect of education on Personality traits t-test analysis was carried out.

Education

To determine the effect of education on personality traits, the sample was divided into two groups: less than primary *(n=* 110) and the primary to matric (*n=90)*. To see the difference on these two groups *t*-test analysis was carried out.

Table 5
Difference between Less and High Educated Laborer Adolescents on EPQ and its Subscale (N = 200)

Sub scales	Education					
	Less than primary n= 110		Primary to secondary n= 90			
	M	*SD*	*M*	*SD*	*t*	*P*
Extraversion	15.44	1.16	16.58	1.30	3.93	.011
Psychoticism	10.51	1.38	10.10	1.04	1.82	.153
Neuroticism	13.60	1.36	13.02	1.94	1.03	.563
Lie	14.35	1.08	12.98	1.12	4.52	.000

df= 198

Table 5 indicates the scores of laborer adolescents on education and personality traits. The results reveal that there is a significant difference of education only on Extraversion and Lie scales of EPQ-(Junior). The mean scores of Lie for the group of less than primary education are higher than primary to secondary education group. Similarly the mean scores of Extraversion for the group primary to secondary are higher than less than primary. The data shows a significant difference in the scores on extraversion and lie among laborer adolescents with different education level, while the difference for Psychoticism and Neuroticism was non significant.

Type of Labor

For the determination of the effect of type of labor on personality traits, the whole sample was divided into five categories of labor type i.e., workshops (*n*= 65), general stores (*n*= 47), restaurants (*n*= *40*), beggars (*n*= 23), and trash collectors (*n*= 25). To determine the difference of sample on labor type one way ANOVA was carried out.

Table 6
Mean, Standard Deviation, and one way ANOVA of scores of EPQ (Junior) and its Subscales with different Labor Type (N=200)

Scale	Types of Labor											
	Workshop n= 65		Restaurant n=40		Stores n= 47		Trash collectors n= 25		Beggary n=23			
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*	*p*
Ext	17.6	1.7	17.6	1.41	16.6	1.6	16.1	1.88	17.2	1.66	.396	.627
Psy	10.9	1.8	9.9	1.6	11.6	2.12	11.0	1.69	10.7	1.97	.194	.760
Neu	13.9	1.3	8.7	2.4	13.9	2.19	10.72	1.53	13.8	1.85	.103	.835
Lie	14.1	1.7	13.3	2.1	14.1	1.64	13.82	2.1	12.8	2.22	.329	.666

df= 4, 195 *Note:* Ext = Extraversion, Psy = Psychoticism, Neu = Neuroticism

Table 6 indicates the results of One Way Analysis of Variance for EPQ-(Junior) scores of laborer adolescents with five different categories of type of labor. The data shows a non significant difference in personality traits among labor type of adolescents ($p > .05$).

DISCUSSION

Personality assessment constitutes a major function in applied psychology in all around the world. Similarly in Asian countries like Pakistan, India, and China the field of personality assessment is largely an "imported" discipline, following the western tradition and paradigm in psychology (Cheung, Leong, & Ben-Porath, 2001). As a result, most of the common personality tests currently used in Pakistan are tests translated from English, for example, the Urdu versions for the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) (Saeed, Tahir, & Jahangir, 2001), NEO-PI-R (Chisti, 2002), and California Psychological Inventory or CPI (Ahmed, Haque, & Kamal, 1994).

In Pakistan the convention, Employment of children Act (1999) emphasized that all type of labor work is strongly prohibited under the age of 18 years (Shujaat, 2003). Since unfortunately to date no literature has been found; role of personality traits to predict the delinquency in laborer adolescents is not yet being explored. Same is the case with some of the demographic variables such as education; type of labor with reference to different personality traits. The direction of the findings of the present research was justified with the help of

existing literature on the normal adolescents and common sense explanations that are prevailing in the society.

Translating and adapting western measures is a common practice in psychological assessment in Asian countries. Despite the emphasis on the scientific standards of psychological assessment, there has been relatively little guidance on the ethical standards of test use and test adaptation for international psychologists. Many tests are translated or adapted without the original authors' or publishers' permission, and copyright compliance is not always observed. The Association of Test Publishers (ATP; Hambleton & Patsula, 1999) and the International Test Commission (ITC**;** Bartrum, 2000) have recently published guidelines on test use and test adaptation, which suggest specific steps for test adaptation, development, administration, and documentation when translating tests from another language.

The strategy of applying foreign instruments and constructs in the local culture, assuming cross-cultural validity and relevance, is called the *imposed etic* strategy (as cited in Saucier & Goldberg, 2001; Church & Lonner, 1998). The cross-cultural studies of personality have shown cultural similarities and differences in the manifestation of personality traits (Groves, 2007). In interpreting cultural differences in personality traits, researcher should consider not only the experiences of people in different cultures, but also the measures adopted and the cultural orientations of him/her self. So the translation and adaptation of an instrument from one culture to another is a sensitive issue (Cheung & Cheung, 2003).

Keeping in mind these views in the present study, cultural equivalence of personality instrument i.e., EPQ (Junior) was established with the help of independent back translation and committee approach. Regarding this the cross-language validity of the instrument was also established.

One cannot assume that a translated instrument is equivalent to the original instrument. We need to demonstrate that they are equivalent. Butcher (1996) presented three levels of equivalence between the original and the translated instruments or scales. Two scales are said to be functionally (or structurally) equivalent if they measure the same constructs in the original and the target cultures, even though the item contents of the two scales may be different. We can evaluate functional equivalence by examining the original and the translated

instruments' inter-item or inter-scale correlations, and their patterns of correlation with external variables.

The second level is metric equivalence. In general, metric equivalence refers to the similarities between the original and the translated instruments in psychometric properties, such as item difficulty level, item-scale correlations, and the pattern of loadings in factor analyses.

The third level is (or full score) equivalence—the extent to which the scale scores indicate the same degree, intensity or magnitude of the characteristic being measured in both cultures. Although this level of equivalence is implicitly assumed when we compare the scale mean differences between two cultures, this level of equivalence is the most difficult to establish (Berry, Poortinga, Segall, & Dasen, 2002).

To see the empirical equivalence of the both versions of the instrument, they were administered to different groups of subjects of bilinguals and monolinguals. The retest reliability is one of the most important features of an objective personality inventory. The administration of inventory on bilinguals was with different sequence. However, it was found that the correlation of Urdu-Urdu retest is higher as compared to Urdu-English retest, English-Urdu retest and English-English retest.

There can be many reasons for this result but the important one is language barrier. Although the original inventory is meant for the age group range from 7-17 years, so the language difficulty of items is maintained by considering the comprehension level of these children, but it was seen practically that Pakistani adolescents of the same age, were not familiar with the certain English words used in the item statements of the original inventory or more appropriately these words are not in common use of Pakistani population. In translated (Urdu) version these problems have been tackled appropriately.

Before applying the translated instrument as if it is the original instrument, we need to conduct local research on the translated instrument. An adapted instrument is like a newly developed instrument. We need to establish its reliability in the local culture, including its internal consistency, test-retest reliability, and factor structure. Problems in internal consistency may reflect inadequacies in translation, genuine cross-cultural differences in the manifestation of a characteristic, or the lack of cultural relevance of the imported

construct. Other psychometric properties of the translated measure also should be compared to those of the original measure, such as item difficulty and endorsement rate. Likewise, the validity of the translated instrument has to be established through a program of local research.

As with original instruments, four aspects of validity need to be studied. How do the scale scores converge with other related instruments (convergent validity), Do the scale items cover the construct being measured adequately (content validity)? Do the scales predict specified outcomes or discriminate between the normative sample and criterion groups (criterion validity)? What is the nomological net covered in the scale and does the construct measured by the scale cover the same nomological net or meaning cross-culturally (construct validity).

In the present study, the psychometric properties of the scale were established. The item total correlation for the subscale of Extraversion ranges from .73 – .89; for the subscale of Neuroticism ranges from .66 – .75; for the subscale of Psychoticism ranges from .68 – .85; for the subscale of Lie ranges from .65 – .82. Alpha coefficients for four subscales are very high and confirm the idea that EPQ (Junior) is a reliable measure.

The inter correlation was determined to check the relationship between different subscales of EPQ (Junior) Urdu version. The inter correlation between Extraversion and Neuroticism is negative indicating these two traits are at opposite continuum. It is also seen that correlations between Lie and other subscales are positive. The score on Lie scale provide the evidence of faking. Although this correlation is average not very high but indicates that adolescents are more nonconformist as they are naïve and less able to introspect (Eysenck & Eysenck, 1970). Similarly, another noteable finding is the low non significant correlation between neuroticism and lie. This is the sign that there is little disposition to dissimulate among adolescents (Eysenck & Eysenck, 1975)

On the basis of over all results it could be held that EPQ (junior) has been adapted, translated, and the cross language validity of the inventory has been established which is satisfactory. Moreover the psychometric properties have also been established. Now the inventory is ready for any kind of further study.

In the present research, it is tried to determine the difference between type of labor and different personality traits. The result (See Table 6) indicated non

significant difference on Extraversion, Psychoticism, Neuroticism, and Lie scores of adolescents and labor type. Moreover, the analysis of the present study reveals non significant effect of education on Psychoticism and Neuroticism and significant effect of education on Extraversion and Lie (See Table 5). It has been found out that there is increase in extraversion score with grade and decrease in Lie score with increase in grade and these finding are consistent with the existing literature (Jones & Francis, 1995). These findings suggest that with increasing grade extraversion trait is more acquired by the laborer adolescents and tendency to dissimulate decreases with increasing in grade. This may be the effect of maturation and conscious acceptance of their conduct and learning of moral behavior with grades (Eysenck & Eysenck, 1970).

Conclusion and Caveat

In summary, the results of this study have important implications for future practice in personality psychology in Pakistan within the context of child labor and policy making. As the child labor work force are increasing in every year statistics and demands to work for. With the all best efforts the following study has some limitations. The sample size used in the present research is not large enough. The representativeness of the finding for further research a national sample may be included in the study. Such a sample is important before the results can be confidently generalized. There is large number of children involved in domestic labor such as home servants and they have not been the part of present research. The present research sample did not constitute on all kinds of labor. Another important factor that is being controlled is the gender. Over all, findings of the present research recommend that developing country like Pakistan, where the child labor has prevailed over the years. However, it was just to wish in this study to bring on record that in our country i.e., Pakistan, we are focusing our attention to these children and those inherent factors like personality traits other than environment which put them at risk for normal development.

REFERENCES

Ahmed, I., & Haque, A., & Kamal, A. (1994). Validation of feminity masculinity scale of psychological inventory in Pakistan. *Pakistan Journal of Psychological Research, 9* (1-4), 27-35.

Ahmad, A. (2007, June 12). Child labor in Pakistan continues to rise [Letter to the editor]. *The Dawn*, p. 8. Retrieved February 10, 2009 from http://www.dawn.com/2007 /06/12/nat13.htm

Anastasi, A. (1997). *Psychological testing* (3rd ed.). New York: Prentice Hall, Inc.

Andrews, D., & Bonta, J. (1994). *Psychology of criminal conduct* (3rd ed.). Cincinnati, Ohio: Anderson Publishing.

Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (2002). *Cross-cultural psychology: Research and applications* (2nd ed.). Cambridge: University Press

Barrett, P., & Kline, P. (1982). Personality factors in the Eysenck Personality Questionnaire. *Personality and Individual Differences, 3,* 259-270.

Bartrum, T. (2000). *International test commission*. Retrieved February 13, 2007 from Yale University Website: http://www.cfcefc.ca/index.shtml?348upe.

Boeree, G. C. (1998). Personality theories. In E. Tailor & D. Goerge (Eds.), *The biological basis of personality* (pp. 25-36). New York: John Wiley & Sons, Inc.

Brislin, R. W. (1976). *Translation, applications, and research*. New York: John Wiley & Sons, Inc.

Butcher, K. (1996). Young offenders and their antisocial behavior [Electronic version]. *Social Science Research, 10,* 79-102.

Carrasco, M., Barker, E., Tremblay, R., & Vitaro, F. (2006). Eysenck's personality dimensions as predictors of male adolescent trajectories of physical aggression, theft and vandalism [Electronic version]. *Personality and Individual Differences, 41,* 1309-1320.

Chapman, L. J., & Kwapil, T. R. (1994). Does the Eysenck Psychoticism Scale predict psychosis- a 10- year longitudinal study? *Journal of Personality and Individual Differences, 17,* 369-37.

Cheung, F. M., & Cheung, S. F. (2003). Measuring personality and values across cultures: Imported versus indigenous measures. In W. J. Lonner, D. L. Dinnel, S. A. Hayes & D. N. Sattler (Eds.), *Online readings in psychology and culture.* Retrieved March 23, 2007 from Washington University, Center for Cross-Cultural Research Web site: http://www.apsu.edu/oconnort/crimetoproject.org/.html

Cheung, F. M., Leong, F. T., & Ben-Porath, Y. (2001). Psychological Assessment in Asia: Introduction to the Special Section. *Psychological Assessment, 23* (6), 45-59.

Child labor in Pakistan. (1996, August 12). Retrieved February 2, 2007 from http://librarythink quest.org /03oct/01908/1024/childlaborinpakistan.htm

Chisti, A. (2002). *Translation and adaptation of revised Neo-personality inventory*. Unpublished M. Phil dissertation, National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan.

Church, A. T., & Lonner, W. J. (1998). The cross-cultural perspective in the study of personality. *Journal of Cross-Cultural Psychology, 29*, 32-62.

Cooper, C. (2002). *Individual differences* (2nd ed.). New York: Oxford University Press

Dannefer, D. (2004). Toward a global geography of the life course: Challenges of late modernity for life course theory. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the life course* (pp. 647–660). New York: Kluwer.

Darley, J. M., Glucksberg, S., & Kinchla, R. A. (1991). *The deviant behavior and* psychology (7th ed.). New York, USA: Prentice Hall.

Davey, S. G., Ebrahim, S., Lewis, S., Hansell, A. I., Palmer, L. J., & Burton, P. R. (2005). Genetic epidemiology and public health: Hope, hype, and future prospects [Electronic version]. *Lancet, 366,* 1484–1498.

Employment of children act. (1991, February 23). Retrieved November 22, 2006 from http://www.clrc.org.pk/childlabour.php.

Eysenck, H., & Eysenck, G. (1970). *Manual of Eysenck Personality Questionnaire (Adult and Junior).* London: Hodder and Stoughton.

Eysenck, H., & Eysenck, G. (1975). Personality in primary school-children [Electronic version]. *British Journal of Education and Psychology, 39*, 109-122.

Eysenck, H., & Eysenck, G. (1985). *Personality and individual differences: A natural science approach* (3rd ed.). New York: Plenum Press.

Eysenck, H., & Eysenck, S. (1975). *Manual of the Eysenck Personality Questionnaire*. London: Hodder and Stoughton.

Eysenck, H., & Gudjonsson, G. (1989). *The causes and cures of criminality* (2nd ed.). New York: Plenum Press.

Eysenck, S. (1970). A factor-analytic study of the lie scale of the junior Eysenck Personality Inventory. *British Journal of Psychology, 1*, 3-10.

Eysenck, S. (1989). Scores on three personality variables as a function of age, sex, and social class. *British Journal of Social and Clinical Psychology, 8*, 69-76.

Eysenck, S., & Eysenck, B. (1973). Test-retest reliabilities of a new personality questionnaire responses. *British Journal of Criminology, 43*, 126-130.

Eysenck, S., & Eysenck, B. (1992). The interpretation of children's Lie scale scores. *British Journal of Educational Psychology, 41* (7), 23-31.

Flint, J., & Mott, R. (2001). Finding the molecular basis of quantitative traits: Successes and pitfalls [Electronic version]. *Nature Reviews Genetics, 2*, 437–445.

Groves, J. A. (2007). German adaptation and standardization of the Personality Assessment Inventory (PAI). *Journal of Personality Assessment, 88*, 49-56. Retrieved March 14, 2007 from http://www.findarticle.com/ public/english/goddness35

Gulrez, E. (2003, December 23).The UN resolution to meet the issue of child labor [Letter to the editor]. *The Pakistan News*, p.12. Retrieved January 17, 2007 from http://www.thepakistannews.com.org/default.asp? storypage12.

Hambleton, I., & Patsula, E. (1999). Closing the gap: Addressing the vocabulary needs of english-language learners in bilingual and mainstream classrooms. *Reading Research Quarterly, 39*, 188–215. Retrieved March 13, 2007, from http://www.aera.net /pubs/rp/RP_Winter04.pdf

Hambleton, R. (1994). Translation: An art and science. In W. R. Brislin (Ed.), *Translation, applications and research* (pp. 215-240). New York: John Wiley & Sons, Inc.

Hollin, C. R. (1992). *Criminal behavior: A psychological approach to explanation and prevention.* London, England: The Falmer Press.

Human rights watch. (2006, February 17). *The Daily News*, p. 8. Retrieved February 2, 2007 from http://www.ishr.ch/hrm/council/commentary/pr ess/index.htm.

Hundleby, S., & Connor, T. (1968). Personality and behavioral problems of adolescents. *Personality and Individual Differences, 14*, 347-363.

International Labor Organization. (1999). Retrieved February 12, 2007 from http://www.ilo.org/public/english/support/publ/revue/art icles/97-4.htm.

Jones, S. H., & Francis, L.J. (1995). The relationship between Eysenck's personality factors and attitude towards truancy among 13–15 year olds in England and Wales. *Personality and Individual Differences, 19*, 225–233.

Levinson, D.F. (2006). The genetics of depression. *Biological Psychiatry, 60*, 84-92. Retreived December 5, 2008 from http//www.sciencedirect.com/ science?_ob=miamilmageURL&imagekey

Lewis, C. A., Francis, L. J., & Shevlin, M. (2002). Confirmatory factor analysis of the French translation of the abbreviated form of the Revised Eysenck

Personality Questionnaire (EPQR-A). *Europe Journal of Psychological Assessment, 18,* 79-85.

Lincoln, K. (2008). Personality, Negative Interactions, and Mental Health. *Social Service Review, 82,* 321-332. Retrieved July 18, 2008 from http://wwwH:\eyse\Chicago Journals-Social Service Review.

Link, R., & Mealey, L. (1992). *The sociobiology of sociopathy: An integrated evolutionary model.* Unpublished manuscript, Bethel College, St. Paul, USA. Retrieved April 10, 2007 from http://www.bethel college.com/getin/geteducated

Lohmueller, K. E., Pearce, C. L., Pike, M., Lander, E. S., & Hirschhorn, J. N. (2003). Meta-analysis of genetic association studies supports a contribution of common variants to susceptibility to common disease [Electronic version]. *Nature Genetics, 33,* 177–182.

Matthews, G., Deary, I. J., & Whiteman, M. C. (2003). *Personality traits* (2nd ed.). Cambridge: Cambridge University Press.

Mccarthy, T. C., Hulsizer, M. R., (2002). *Psychology and law: A teaching resource.* Retrieved February 6, 2007 from American Psychology-Law Society. Graduate programs: Clinical PhD/PsyD programs Website: http://www.apls.org/students/grad uateIndex.html.

Perez, J. (1986). Eysenck theory and juvenile delinquency. *Journal of Personality, 6,* 35-61. Retrieved November 13, 2006 from http://www.pubmed.nih.gov/articlerender.fcgi?artid=12173.

Pervin, L., & John, O. (2001). *Personality theory and research* (8th ed.). New York: John Wiley & Sons.

Roberts, B. W., Wood, D., & Smith, J. L. (2005). Evaluationg five factor theory and social investment perspectives on personality trait development. *Journal of Research in Personality, 39,* 166-184.

Saeed, T., Tahir, S., & Jahangir, F. (2001). Validation of Urdu version of Minnesota Multiphasic Personality Inventory (MMPI) as a diagnostic tool in Pakistan. *Journal of Psychological Research, 16* (1-2), 19-29.

Saucier, G., & Goldberg, L. R. (2001). Lexical studies of indigenous personality factors: Premises, products, and prospects [Electronic version]. *Journal of Personality, 69,* 847–879.

Schultz, D. P. (2001). Behavioral genetics: Hans Eysenck. In D. Schultz & S. E. Schultz (Eds.), *Theories of personality* (7th ed., pp. 265-274). New York: Wadsworth , A Division of Thomson Learning, Inc.

Sharma, A., Sharp, D., Walker, L., & Monson, J. (2008). Patient personality predicts postoperative stay after colorectal cancer resection. *Pubmedication, 10* (4), 397- 406. Retrieved November 11, 2008 from http://www.ncbi.nlm.nih.gov/pubmed/17711498

Shujaat, C. (2003, May 11). Reflection. *The Daily News*, p.2. Retrieved April 10, 2007 from http://www.dailynews.com.org/childlabor2.html.

Tiwari, T., Singh, A., & Singh, I. (2009). The short-form revised Eysenck personality questionnaire: A Hindi edition (EPQRS-H). *Industrial Psychiatry Journal, 18* (1), 27-31

Van, C., De Bruyn., & Janssens, M. (2007). Personality, delinquency, and criminal recidivism [Electronic version]. *Adolescence, 42,* 763-777.

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MEASURING DISTANCE IN PERSONAL RELATIONSHIPS (A Preliminary Report)

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ABSTRACT

The study is divided into three parts. The first part is aimed at identifying gender differences in the use of relational distancing tactics by university students (38 males and 38 females). It was seen that women tend to use the strategy of disengagement significantly more than males ($p < .01$). The results showed that disengagement was used more than avoidance ($t = -7.221$, $p < .001$) and cognitive dissonance ($t = 14.440$, $p < .001$) as distance strategies. The second study explores the relationship between Relational Distance Index and subjective distance perception on a sample of 36 students. The test-retest reliability of Relational Distance Index (Hess, 2003) as measured in the third study on 100 Pakistani students turned out to be $r = .698$, $p < .001$. Means, correlations and t-tests are used for the analysis of the data.

Key Words: Gender Differences, Distance, Relational, Subjective, Personal Relationships, Test Retest Reliability

INTRODUCTION

Human relationships are the most cardinal aspects of an individual's life. Hence, it is not surprising that several inquiries have been made in this area. Many diverse aspects such as the worth of relationships in our lives, gender differences in handling relationships, and how each of us tries to preserve them so that they continue to benefit us, have been covered. Hess (2000, 2002) noticed a gap in the scientific literature on relationships that little attention has been paid to relational distance. The present study too aims at exploring the various distancing tactics that Pakistani males and females use for people whom they dislike.

The prime focus of the definitions of interpersonal relationships is interaction. Denzin (1970) provides a typical definition: "A relationship exists between two or more people when those people engage in recurrent forms of either symbolic or co-present interaction…For a relationship to exist the parties involved must share the same or [a] similar set of reciprocal definitions about the other. Further, these definitions must extend through time so that the influence of the other does not disappear when he is out of physical, face-to-face presence…It is possible to speak, then, of relationships that are reciprocated and those that are non-reciprocated. Further, there are those that are reciprocated, but not evenly so."Relationships whether close or distant have an enormous impact on our lives. Jacobson (1989) observed that most marital conflicts revolved around the matter of closeness and distance in the relationship. A close interaction between two individuals alludes to the degree of interdependence while they strive to achieve a common goal (Berscheid & Peplau, 1983; Kelley & Thaibaut, 1978). Distance on the other hand, is a characteristic indication of conflict and tension in a relationship (Hess, 2003). Kantor and Lehr (1975) hold both—felt and real—distances to be the prime elements in family interactions. Distance has been defined as a "feeling of separation from another" (Hess, 2002, p. 664). Hess (2003) reversed the elements Berscheid et al. (1989) identified for closeness (i.e. frequent, strong and varied causal connections) into factors characteristic of distance. The author believed that distance built up through infrequent, weak and unvaried causal interconnections. Distance is not a mere flipside of closeness. There is more to it. When the presence of partner is uncomfortable, one searches for means of escape either physically or psychologically. Distance according to Hess (2003) may be perceptual (e.g. relational satisfaction) or behavioral (e.g. negativity in communication).

Relational distance may be created through a variety of behaviors e.g. getting into arguments on petty issues, flight when the situation demands confrontation, not talking or talking only about superficial issues, not giving enough time or cutting back the usual time, not following the unwritten rules specific to a relationship etc. When one becomes too demanding of the partner, and little or no space is given, it can create frustration and eventually lead to distance. Hess (2000) identified three strategies which effectively produces distance in relationships: Avoidance, Disengagement and Cognitive Dissonance. Avoidance is one of the common ways through which people create distance (Hess, 2003).

A classic study on children's play (Maltz & Borker, 1982) suggests that the games in which child of each gender indulges, determines how, when and why to communicate. Traditionally, boys play games with predefined rules (e.g. cricket), thus there is little verbal communication. Despite the differences both types of games foster closeness. In Eastern societies, like that of Pakistan, women are expected to be more tolerant in their attitude and to be subtle in their expression of emotions especially those that are negative (such as hatred). Men, on the other hand, are at a comparatively greater liberty at the expression of such emotions. Hess's Relational Distance Index (2003) is used here to see difference between the two genders in this regard. Thus it is hypothesized that males and females will score differently on Relational Distance Index. The study also aims at exploring the type of strategy utilized by our sample. It is assumed that one strategy will be used more than the other from among avoidance, cognitive dissonance and disengagement. An index of subjective distance i.e. SDP (Hess, 2003, Study 2) was also utilized. It was hypothesized that subjective distance perception is positively correlated with RDI (as seen in Hess, 2003). The present study further explored the test-retest reliability of RDI on the present sample. Whether the relationship is ongoing or it has been terminated it does not affect reports of distance perception in the Relational Distance Index (RDI). Therefore, in our study, no attempts were made to choose only subjects with either terminated or ongoing avoidant relationships.

METHODOLOGY

Participants

The participants for study 1 were 38 males and 38 females from different departments in third year Honors or MA Previous and MA Final of University of Karachi, Pakistan. Their age ranged from 20 to 24, with an average of 22 years. The subjects came from different socio-economic backgrounds, while study 2 was conducted on 36 subjects while all the other criteria set for the participants were the same as those in study 1. Study 3 comprised of 100 participants having similar qualities as in study 1 and 2.

Measures

Relational Distance Index (RDI)

Relational Distance Index was employed to measure distance in relationships. It was developed by Hess (2003) comprising of 17 items. It measures distance with reference to three components, namely avoidance, dissociation and cognitive dissonance. The response category of Relational Distance Index ranges from 1 = I never did this to 7 = I did this every time possible.

The index had .88 level of reliability in Hess's (2003) studies. A test-retest study found a correlation of .75 over a 3 week interval. The RDI correlates positively with subjectively judged distance and mutual avoidance, and negatively with affectionate communication, affective role behavior, and liking. It is not significantly related to the tendency to answer questions in a socially desirable manner. These associations hold for both college students and adults who are not students. Relationship status (ongoing or terminated) and length of association do not impact people's reports of distance in the Relational Distance Index (Hess, 2003).

Subjective Distance Perception (SDP)

It was developed by Hess (2003) comprising of 1 item, which was answered with a 7-point scale anchored by very close and very distant.

Procedure

Study 1

In the first study, students were required to think of a relationship with someone they strongly disliked, because such relationships are highly characterized by distance (Hess, 2000). They were instructed to rate how frequently they used each of the distancing tactics in that relationship on a seven-point scale, anchored by 1 = *I never did this* to 7 = *I did this every time possible*. This raw data of each component of distance was converted into means and percentages for convenience. A t-test showed the significance of the difference between males and females.

Study 2

The Relational Distance Index (RDI) was first administered to the subjects with the same instructions, and scored on the same seven-point rating scale. They were then required to answer the item on Subjective Distance Perception (SDP) scale, which was again scored on a seven point scale: 1 = very close and 7 = very distant. Pearson r was calculated for the results.

Study 3

In order to find out the reliability of Relational Distance Index, the third study was based on test-retest hypothesis. The participants were required to give responses to the 17-item Relational Distance Index with the above mentioned requisites. After an interval of 10 days, the same test was re-administered in order to determine the RDI 2. Earlier researches have shown a high level of reliability (Hess, 2003). Pearson r was again calculated for RDI 1st and RDI 2nd administrations to determine their relationship in the present study.

RESULTS

Table 1
Descriptive Statistics on RDI

		Avoidance			Disengagement		
	N	$\sum$	$\bar{X}$	***%***	$\sum$	$\bar{X}$	***%***
Males	38	821	21.61	32.14	1054	27.73	41.26
Females	38	948	24.94	31.86	1230	32.36	41.34
General	76	1769	23.28	31.99	2284	30.05	41.31
		Cog. Dissociation			**RD11**		
	N	$\sum$	$\bar{X}$	***%***	$\sum$	$\bar{X}$	
Males	38	679	17.87	26.5	2554	67.21	
Females	38	797	20.97	26.78	2975	78.29	
General	76	1476	19.42	26.69	5529	72.75	

Table 1 Illustrate the totals, means, and percentages for the three factors: avoidance, disengagement and cognitive dissociation. All these indicate that females have a high mean values and percentages in all three categories other than avoidance.

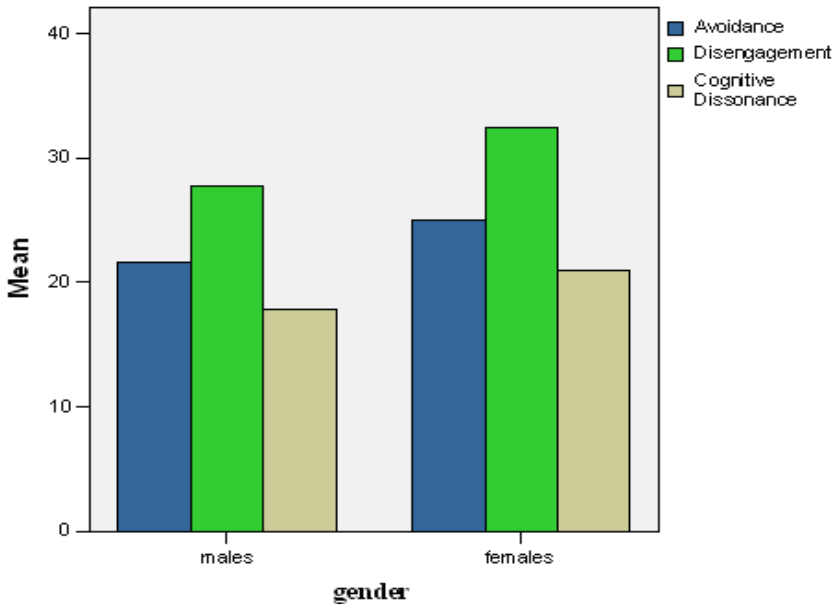

Figure 1: different distancing strategies used by males as females

Table 2
Independent Sample t test between males and females for use of different distancing strategies

		Leven's Test for equality of variance		T test for equality of Means				
		F	***sig***	***t***	***df***	***sig***	**Mean difference**	**Std.Error difference**
Disengagement	**E V**	6.90	.010	-2.58	74	.012	-4.63	1.79
	EVN			-2.58	68.42	.012	-4.63	1.79
Cognitive	**EV**	.239	.626	-2.07	74	.041	-3.10	1.49
Dissonance	**EVN**			-2.07	73.20	.041	-3.10	1.49
Avoidance	**EV**	.802	.373	-2.42	74	.018	-3.34	1.37
	EVN			-2.42	75.05	.018	-3.34	1.37

EV= Equal Variance assumed, EVN = Equal Vairance not assumed

Table3

Independent Sample t test between males and females for use of overall relational distancing strategies

		Leven's Test for equality of variance		T test for equality of Means				
		F	***sig***	***t***	***df***	***sig***	**Mean difference**	**Std.Error difference**
Relational Distancing Strategies	**E V**	1.978	.164	-3.060	74	.003	-11.07	3.620
	EVN			-3.060	71.52	.003	-11.07	3.620

EV= Equal Variance assumed, EVN = Equal Vairance not assumed

Table 4

Paired Sample t tests for comparison between use of different distancing strategies among subjects

	Paired Difference					***t***	***df***	***sig***
	Mean	**Std. Dev**	**Std. Error Mean**	**95% confidence Interval of the difference**				
				Lower	**Upper**			
Pair 1 A - D	-6.77	8.18	.938	-8.646	-4.907	-7.221	75	.000
Pair 2 A - CD	3.85	7.81	.896	2.070	5.641	4.301	75	.000
Pair 3 D - CD	10.63	6.41	.736	9.165	12.098	14.440	75	.000

A= Avoidance, D= Disengagement, CD= Cognitive Dissonance

Table 5

Correlation between RDI and SDP

		SDP
RDI	**Pearson *r***	-.156
	Sig. (1-tailed)	.181
	N	36

Table 5 is demonstrating that a negative and insignificant relationship exists between Relational Distance Index (RDI) and Subjective Distance Perception (SDP).

Table 6
Test re test Reliability of RDI

RDI1	**Pearson *r***	.698
and	**Sig. (1-tailed)**	.000
RDI2	***N***	100

Table 6 is showing a high positive correlation between Relational Distance Index 1 (RDI 1) and Relational Distance Index 2 (RDI 2). RDI exhibits good temporal stability.

DISCUSSION

Study 1

The present study was based on distance in relationships. In this context, two hypotheses were formulated. The distancing tactics were distributed unevenly into three categories of avoidance, disengagement and cognitive dissociation. An analysis of these showed that people tend to disengage themselves more frequently from the disliked person rather than avoiding him or dissociating with the person in question. It's seen in table 1 that the subjects showed a highest total and thus maximum mean and percentage for the use of disengagement tactic and lowest for cognitive dissociation. This observation offers insight into the motivational force controlling people's use of distancing tactics. Using cognitive dissociation dehumanizes the disliked individual, for example ignoring his/her thoughts feelings and intentions as seen in item no. 10 of the questionnaire *("I ignored _____'s thoughts, feelings, and intentions")*. This is probably why the participants use disengagement most frequently as a distancing strategy. The researchers also wished to study the differences in males and females with reference to relational distance. It was observed that the females overall do not tend to use distance tactics more than men. Except that disengagement is used at a significantly higher level by females.

Study 2

The second study was focused on studying the relationship between Relational Distance Index (RDI) and Subjective Distance Perception (SDP). Our present study did not show a significant relationship. One plausible explanation for this difference is that long-term relations may lead to uncomfortable patterns of interaction. That is, it is easy to be consistently close to someone in a voluntary association, and it is easy to be consistently distant with a disliked

individual in a non-voluntary relationship. However, it is harder to be consistently close in a long-term ongoing relationship (Hess, 2003), termination of which is not in the hands of the individual. For example, in a society like ours, it is not socially acceptable to break contact with immediate family members or even other close relatives. This desire of a respectable survival in the society and the disliking for someone, with whom relationship cannot be terminated, seems to be governed by an approach-avoidance conflict.

Study 3

In order to determine the test-retest reliability of the index, the third study was conducted on a larger representative sample of Pakistani student population. It was seen that the subjects retained more or less same scores in the two administrations showing a high positive correlation, significant at .01 level. The results lend support to the hypothesis that the Index is consistent over a period of time. Test-retest of Relational Distance Index in the original study by Hess (2003), with n = 157, showed the value, r = .75, which is slightly higher than the one obtained in the present study. The difference could be attributed to some uncontrolled variable in the environment. The subjects were university students and they probably had other workload, thus they may have voluntarily or non-voluntarily hurried through the questionnaire and done injustice to their responses. Although the correlation is slightly smaller, it is still significant, therefore, it may be concluded that it is a reliable instrument capable of measuring people's perceptions of distancing tactics used in a personal relationship.

Conclusion

Females tend to use disengagement more than males as a distancing strategy. Otherwise no gender difference was observed with regard to RDI. SDP was not seen to be positively correlated with RDI. Lastly, a test-retest reliability of RDI showed a significantly high correlation.

REFERENCES

Berscheid, E., & Peplau, L. A. (1983). The emerging science of relationships. In H. H. Kelley, E. Berscheid, A. Christiansen, J.H. Harvery, T.L. Huston, G. Levinger, E. McClintock, L.A. Peplau & D.R. Peterson (Eds.), *Close relationships* (pp. 1-19). San Francisco: Freeman.

Berscheid, E., Snyder, M., & Omoto, A. (1989). The relationship closeness inventory: Assessing the closeness of interpersonal relationships. *Journal of Personality and Social Psychology, 57,* 792—807

Denzin, N.K. (1970). *The research act: A theoretical introduction to sociological methods.* Chicago: Aldine.

Hess, J. A. (2002). "Distance regulation in personal relationships: The development of a conceptual model and a test of representational validity." *Journal of Social and Personal Relationships, 19,* 663-683.

Hess, J.A. (2000). Maintainign nonvoluntary relationships with disliked partners: An investigation into the use of distancing behaviors. *Human Communication Research, 26,* 458—488.

Hess, J.A. (2003). Measuring distance in personal relationships: The Relational Distance Index. *Personal Relationships,* 10. pp.197–215

Jacobson, N.S. (1989). The politics of intimacy. *Behavior Therapist, 12,* 29—32

Kantor, D., & Lehr, W. (1975). *Inside the family*. San Francisco: Jossey-Bass.

Kelley, H.H., & Thaibaut, J.W. (1978). *Interpersonal relations: A theory of interdependence*. New York: John Wiley.

Maltz, D. N., & Borker, R. A. (1982). A cultural approach to male-female miscommunication. In J. J. Gumperz (Ed.), *Language and social identity* (pp. 196-216). New York: Cambridge University Press.

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RELATIONSHIP BETWEEN AFFECT INTENSITY AND PERSONALITY TRAITS AMONG UNIVERSITY STUDENTS

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ABSTRACT

The main objective of the present research was to determine and understand relationship between Affect Intensity (AI) and personality traits. Keeping in view the literature review it was hypothesized that Extraversion, Agreeableness, Openness/ Intellect, and Conscientiousness would be positively correlated with Positive Affect Intensity and Emotional Stability would be negatively correlated with Negative Affect Intensity among students. It was also hypothesized that women would score high on Affect Intensity Measure as compared to men. Sample of 120 participants was taken comprising of equal number of men (n=60) and women (n=60), ranging in age from 18-25 years, and were students of B.Sc and M.Sc. from Bahria University (n=40), Air University (n=35), Islamic International University (n=25), Islamabad and Arid Agriculture University (n=20), Rawalpindi. Affect Intensity Measure (Larsen, 1984) to measure Affect Intensity and Mini Marker Personality Inventory (Saucier, 1994) were used to assess different personality traits like, Extraversion, Agreeableness, Openness/Intellect, Emotional Stability, and Conscientiousness. English versions of both measures were used. Alpha reliability coefficients were established to determine the psychometric properties of the two scales. Correlational analysis and Regression analysis was applied to determine the relationship between the variables, and t-test was employed to explore the gender differences. Results/findings indicates that Extraversion ($r = .27$, $p<.01$), Agreeableness ($r = .29$, $p<.01$), Openness/Intellect ($r = .30$, $p<.01$), and Emotional stability ($r = .29$, $p<.01$) are positively

related with Positive Affect Intensity whereas Conscientiousness has insignificant relationship with Positive Affect Intensity. Furthermore, Extraversion (r = -.27, p<.01) is found to be negatively related with Negative Affect intensity whereas insignificant relationship of Agreeableness, Openness/Intellect, Emotional stability and Conscientiousness with Negative Affect intensity is revealed. Regression analysis showed that Extraversion (B = .09, S.E = .05, β = .17, t =1.97, p < .05) and Emotional Stability (B = .12, S.E = .04, β = .23, t =.71, p < .01) significantly predicts Positive Affect Intensity, while Extraversion (B = -.22, S.E =.06, β = -.35, t = -3.81, p < .05) and Emotional Stability (B = -.11, S.E = .05, β = -.19, t = -2.06, p < .05) has significant negative prediction towards Negative Affect Intensity. The findings of the present research suggest that Affect Intensity does have significant relationship with personality traits. For Positive and Negative Affect Intensity it can be concluded that Extraversion, Agreeableness, and Openness/Intellect are the major correlating traits. However, Extraversion and Emotional Stability significantly predicts Positive Affect Intensity whereas these traits do not predict Negative Affect Intensity. Gender differences on the Affect Intensity measure revealed that women's scores were significantly high on this construct.

INTRODUCTION

In viewing that how emotions are experienced, perhaps the major stylistic way is that of the intensity. From emotional reactions it is known that emotions vary greatly in terms of magnitude (Larsen & Buss, 2005). Emotions can be weak, mild or strong, and almost uncontrollable. Affect Intensity is usually defined as an individual difference in the typical intensity with which people experience their emotional responses (Larsen, 2007). Affect Intensity can be further elaborated by a description of persons who are either high or low in this dimension (Larsen & Diener, 1987).

High affect intensity individuals are people who typically experience their emotions strongly and are emotionally reactive and variable. High affect intensity subjects typically boost up their emotions when they are feeling high and trim down themselves when feeling low (Larsen, Billings, & Cutler, 1996).

They also fluctuate between these extremes more frequently and rapidly than do low affect intensity individuals (Larsen & Diener, 1987). Low Affect Intensity individuals on the other hand, typically experience their emotions only mildly, with fluctuations, and minor reactions (Larsen, 2007). Such persons are stable and calm and usually do not suffer the troughs of negative emotions, but they also tend not to experience the peaks of enthusiasm, joy, and other strong positive emotions (Larsen, Diener, & Emmons, 1986). Affect intensity also include affective variability, that is persons high on affect intensity are not only emotionally more reactive but also over the time, their emotional states vary more generally as they react to ongoing life events (Larsen & Buss, 2005). The construct generalizes over particular emotions for example, people who experience their positive emotions more strongly are likely to experience their negative emotions more strongly as well (Larsen, 2000).

Cooper and McConville (1993) contended that the Affect Intensity (AI) construct is a statistical artifact of the Affect Intensity (AI) score calculation procedures. In their view, positive and negative Affect Intensity (AI) values are equivalent to mean levels of positive and negative affect. Extensive evidence indicates that there are two dominant dimensions of emotional experience: Negative Affect and Positive Affect (Watson & Tellegen, 1985 as cited in Watson & Clark, 1992). Negative Affect is a general dimension of subjective distress and dissatisfaction. High negative affect is composed of several negative emotional states including fear, anger, sadness, guilt, contempt, and disgust. Positive affect dimension reflects important co-occurrences among positive mood states. In other words, individual who reports joyful sentiments will also report feelings of being interested, excited, confident, and alert.

Personality variables that found to be most frequently correlating with Affect Intensity (AI) are extraversion and neuroticism (Dritschel & Teasdale, 1991; Kardum, 1999; Larsen & Diener, 1987). Both of these personality variables correlate positively and moderately with Affect Intensity. This is most likely because extraversion is related to a disposition to respond with stronger positive emotional reactivity, and neuroticism with a disposition to respond with negative emotional reactivity (Larsen & Ketelaar, 1991; Rusting & Larsen, 1999; Zelenski & Larsen, 2002). The relationship between extraversion and positive affect based on the temperament models indicated that the association is direct; whereas instrumental models suggest that the association is mediated by additional processes (Lucas, Le, & Dyrenforth, 2008), and extraverts' greater social activity can account for their increased positive affect when compared to introverts. According to a person-by-situation interaction model (Kardum, 1999)

extraverts react more positively to social situations than do introverts, and this interaction can account for the association. It has also been observed that relationship between extraversion and positive affect is evident within person over the time and strong relationship exists between individual's current state of positive affect and his/her current extraversion (Fleeson, Malanos, & Achille, 2002).

McCrae and Costa (1991) found that high levels of Agreeableness are associated with increased positive affect and decreased negative affect, further more agreeable and conscientious subjects reported greater overall wellbeing and a higher level of life satisfaction. Consistent with their instrumental view, results indicated that loving and hardworking people have more positive experiences and fewer negative experiences because these traits foster social achievement related successes (Watson & Clark, 1992). Meyer and Shack (1989) showed in their study that extraversion and positive affect share a common dimension in combined mood personality space and strong associations were found between openness and extraversion with positive affect. Similarly, Conscientiousness also found to have direct relation with general positive affect (Saucier & Goldberg, 2001), whereas hostility had a strong independent association with low agreeableness (Goldberg, 1992). Moreover, moderate levels of correlation were found between Openness and Positive Affect (Watson & Clark, 1992).

Affect Intensity (AI) is the individual difference in emotional expression. Therefore studies have been done to explore the relationship of emotions with respect to personality traits. Larsen and Ketelaar (1991) conducted significant research on personality and susceptibility to positive and negative emotional states. It was found that neurotics show heightened emotional reactivity to negative mood induction whereas extraverts show heightened emotional reactivity to the positive mood induction (Larsen & Ketelaar, 1991)

The objective of the present study is to explore the relationship between Positive Affect Intensity and Negative Affect Intensity with different personality traits. When one says that someone is happy person, then it usually means that he or she tends to exhibit levels of positive emotions over time but of course one will not be happy all the time. Emotions do fluctuate and even a very happy person will experience sadness and anxiety on many occasions. If a person is consistently happy in spite of constantly fluctuating circumstances, it may be necessary to investigate the dynamic processes that underlie these stable emotional states (Larsen & Diener, 1987). For instance, higher levels of happiness may be due to individual differences in reactivity, adaptation, or

emotion regulation. Each of these processes would suggest distinct patterns of change within individual overtime. Furthermore, it is thought that it may be possible that different personality traits might be a strong proponent for positive and negative affectivity level of an individual.

One way to clarify the dynamic processes that underlie these differences is to identify robust associations between personality traits and stable levels of affect. For that matter it is necessary to understand these two concepts. Besides this, youth being an integral part of the society, there has been strong dearth in the study of affect among them. Therefore, it is essential to explore this phenomenon considering the importance this age group in Pakistani Society.

METHOD

Participants

Participants (N = 120) ranging in age from 18-25 years with mean age of 20.78 years were taken. The sample comprised both unmarried men (n = 60) and unmarried women (n = 60). Respondents were students of B.Sc. (n = 81) and M.Sc. (n = 39) from Bahria University (n = 40), Air University (n = 35), Islamic International University (n = 25), Islamabad and Arid Agriculture University, Rawalpindi (n = 20). Most of the respondents' monthly income ranged from Rs. 20,000-50,000/-

Measures

Affect Intensity Measure

Affect Intensity was assessed by original English version of Affect Intensity Measure (Larsen, 1984). Affect Intensity Measure (AIM) is a 40-item questionnaire assessing the characteristic magnitude of a person's emotional reactions. Items were states so as to tap the intensity dimension, e.g., "When I am happy the feeling is one of intense joy." Intensity concerns with emotions in general, regardless of their specific content. Items tap both strong positive reactions and strong negative reactions, as well as the strength of specific emotions such as guilt, disgust, pride, enthusiasm, embarrassment, and joy. There are 24 positive intensity, 13 negative intensity, 3 neutral, and 11 reverse coded items. AIM is a 6-point rating scale with response categories "Never", "Almost Never", "Occasionally", "Usually," "Almost Always", and "Always" with

response weightage 1, 2, 3, 4, 5, and 6 respectively. The mean scores of all these items are computed after reversing the negative items. High scores on respective subscales will determine the Affect Intensity dimension.

AIM showed an acceptable level of internal consistency, with coefficient alpha ranging from .90 to .94 across four samples (Larsen & Diener, 1987) split-half correlations ranging from .73 to .82, and the mean corrected item-total correlations ranging .41 to .51. In terms of temporal stability, AIM obtains 1-, 2-, and 3-month test-retest correlations of .80, .81, and .81; respectively. In the present study, alpha reliability coefficient was found to be .78 (N=120).

Mini Marker Personality Inventory

The Mini-Marker personality inventory (Saucier, 1994) based on Goldberg's (1990) Big Five Factor Personality Theory. Mini-Marker personality inventory (MM) is an abbreviated inventory with 40 items. The factors from the Mini-Marker personality inventory (MM) correspond closely to those derived from the full set of 100 markers. Factors derived from the Mini-Marker personality inventory (MM) correlated .92 to .96 (raw data) and .91 to .96 (scored data) with the corresponding factors from the full marker set (Saucier, 1994; Chaudhary, 2008). In the present study, alpha reliability coefficient for Mini Marker personality inventory was found to be .69 (N = 120).

There are five subscales for the Big Five personality factors with 8 items for each factor (with negative loading items which are reversed for scoring). The Mini-Marker personality inventory (MM) measures the five factors of personality by adjectives. The Mini-Marker personality inventory (MM) is originally a 9-point scale with positive (efficient, kind) and negative (inefficient, unsympathetic) items. The sum of scores for each scale is then divided by 8 (total number of items in each scale) to arrive at the mean response value for items on the given scale.

Procedure

The participants were firstly given consent and demographic forms. After taking their consents, Affect Intensity Measure was administered, followed by Mini-Marker personality inventory. The respondents took about 15 to 20 minutes in completing both questionnaires. Scales were individually administered and questionnaires were collected on the same day of administration.

RESULTS

Table 1

Alpha Reliability Coefficients for the Affect Intensity Measure (AIM), Mini Marker Personality Inventory and their subscales (N=120)

AIM, MM and subscales	No of items	Alpha Coefficient
Positive Affect Intensity	24	.73
Negative Affect Intensity	13	.62
Neutral Affect Intensity	3	.23
Affect Intensity Measure (AIM)	40	.78
Extraversion	8	.44
Agreeableness	8	.56
Openness/Intellect	8	.36
Emotional Stability	8	.48
Conscientiousness	8	.69
Mini Marker Personality Inventory (MM)	40	.69

Table 1 shows alpha reliability coefficients of AIM and Mini Marker personality inventory. It was found that alpha reliability of subscales of AIM ranged from .23 to .73 and for total Aim it was .78. Moreover, reliability coefficients of MM subscales varied from .36 to .69 while for overall MM it turned out to be .69.

Table 2

Mean, Standard Deviation and t-values on total Affect Intensity Measure (AIM) for Gender Difference (N=120)

Scale	Men (n=60)		Women (*n*=60)		
	M	***S.D***	***M***	***S.D***	***t***
AIM	3.68	.44	3.84	.47	1.94*

*df =118, *p < .05*

Table 3 shows mean, standard deviation and *t*-values of Affect Intensity (AI) total scores of men and women. Women scored significantly higher than men [t (118) = 1.94, $p < .05$] on AIM.

Table 3

Correlation coefficients and Regression Analysis of Positive Affect Intensity and Subscales of Mini Marker Personality Inventory (N=120)

Subscales of MM	*r*	*B*	*S.E*	*β*	*t*
Extraversion	.27**	.09	.05	.17	1.97*
Agreeableness	.29**	.05	.05	.11	1.11
Openness/Intellect	.30**	.08	.05	.16	1.57
Emotional Stability	.29**	.12	.04	.23	2.73**
Conscientiousness	.12	.03	.04	.06	.71

*R= .455, R^2= .207, Adjusted R^2= .172, S.E Estimate= .485, F= 5.941, p < .01**, p < .05**

Table 3 shows regression analysis of Positive Affect Intensity and subscales of Mini Marker Personality Inventory. Extraversion and Emotional Stability is significantly predicting Positive Affect Intensity (B = .09, $S.E$ = .05, β = .17, t = 1.97, p < .05; B = .12, $S.E$ = .04, β = .23, t = .71, p < .01). On the other hand Agreeableness, Openness/Intellect, and Conscientiousness showed non significant results.

Table 4

Correlation coefficients and Regression Analysis of Negative Affect Intensity and Subscales of Mini Marker Personality Inventory (N=120)

Subscales of MM	*r*	*B*	*S.E*	*β*	*t*
Extraversion	-.21**	-.22	.06	-.35	-3.81**
Agreeableness	.11	.08	.08	.15	1.37
Openness/Intellect	.07	.03	.06	.05	.44
Emotional Stability	-.15	-.11	.05	-.19	-2.06*
Conscientiousness	.04	.01	.05	.02	.21

*R=.379[a], R^2=.144, Adjusted R^2=.106, S.E Estimate=.591, F=3.82,3, p < .01**, p < .05**,*

Table 4 shows regression analysis of Negative affect intensity and subscales of Mini Marker Personality Inventory. Extraversion and Emotional Stability has significant negative prediction trend towards Negative affect intensity (B = -.22, $S.E$ =.06, β =-.35, t = -3.81, p < .01; B = -.11, $S.E$ =.05, β= -.19, t = -2.06, p <.05). On the other hand Agreeableness, Openness/Intellect and Conscientiousness showed non significant results.

DISCUSSION

The first hypothesis that Extraversion is positively correlated with Positive Affect Intensity was supported by the results which showed significant positive correlation ($r = .27$, $p < .01$; Table 3) between Extraversion and Positive affect intensity. Existing research evidence also provide supportive evidence that extraversion is related to a disposition to respond with stronger positive emotional reactivity (Larsen & Ketelaar, 1991; Rusting & Larsen, 1999; Zelenski & Larsen, 2002). These studies were done experimentally with mood induction procedures. Temperamental model (McCrae & Costa, 1991) also acknowledges the fact that extraverts are endowed with a more cheerful and enthusiastic temperament, so that individual differences in positive emotionality form a core aspect of this personality factor. Similarly, extraverts do engage in some types of social activity more than introverts (Lucas, Le, & Dyrenforth, 2008) and the types of social activities in which extraverts tend to engage are also the types of activities that are most strongly correlated with positive affect.

The second hypothesis states positive correlation between Agreeableness and Positive Affect Intensity was supported by results indicating significant positive correlation between Agreeableness and Positive Affect Intensity ($r = .29$, $p < .01$; Table 3). It has been previously observed that positive expression is correlated with Agreeableness (Abe & Izard, 1999). Further more, high levels of Agreeableness are associated with increased positive affect and decreased negative affect, and agreeable subjects reported greater overall wellbeing and a higher level of life satisfaction (McCrae & Costa, 1991). Additionally socially active and striving individuals usually experience social situations more positively than negative experience, therefore, these traits encourage social achievement successes (McCrae & Costa, 1991).

Significant positive relationship between Openness/Intellect and Positive Affect Intensity (*See Table 3*), leading to the inference that positive expression was positively correlated with Openness to Experience (Abe & Izard, 1999). On the other hand low but significant correlations between an Openness to Experience marker and measure of Positive and Negative Affect were found (McCrae & Costa, 1984). Some of the traits like imaginative, creative, and introspective are considered to be more prone towards the positive aspects of life and are more affirmative in nature (Watson & Clark, 1992) revealing moderate level of correlation between Openness and Positive Affect.

The findings of Emotional Stability and Negative Affect Intensity is non significant ($r = -.15$; Table 4), and this is possibly due to the factor that participants scored higher on emotional stability, that is reporting their positive traits more rather than negative traits. Therefore, Emotional Stability correlates significantly with Positive Affect Intensity ($r = .29$, $p < .01$; Table 3).

On the other hand non significant ($r = .12$; Table 3) relationship between Conscientiousness and Positive Affect Intensity was found. It has been observed that conscientious subjects reported greater overall wellbeing and a higher level of life satisfaction (McCrae & Costa, 1991). Conscientiousness correlated positively with Positive Affect (Watson & Clark, 1992). However, the relationship was shown to be on its moderate levels. The correlation between these two variables might be non significant because the sample comprised of participants who were young adolescents or in early adulthood. During the developmental phase of life, one is not that planned, organized and has low impulse control. This has been a general observation about people belonging to this age group (Santrock, 2005).

Significant gender difference in Affect Intensity Measure (AIM) was found. It was observed that women scored higher than men (*see Table 2*). Research evidence supports this finding as women tends to be high scorers on Affect Intensity Measure (AIM) as compared to men at least in young adult sample (Goldsmith, & Walters, 1989; Fujita, Diener, & Sandvik, 1991; Seidlitz, & Diener, 1998; Williams, & Barry, 2003; Larsen, 2007). It can be justified as nowadays socialization has increased a lot. Women in comparison to the past are now more into social interactions and putting in their energies in the main stream (Shah, 2002). Gender difference seems to be diminishing from the society. Role of women is changed drastically over the years. They are working and studying with their men counterparts. This makes them more confident and exchange of views creates a whole new way of thinking in women.

Table *3* showed that Extraversion significantly predicts Positive Affect Intensity, whereas, Extraversion has significant negative prediction trend towards Negative Affect Intensity (*See Table 4*). These findings are consistent with the findings discussed above. The correlational analysis showed significant positive relationship between Extraversion and Positive Affect Intensity ($r = .27$, $p < .01$). It has been previously explored that extraversion predicts pleasant positive emotionality under predictions of Eysenck's theory (Gomez, Gomez, & Cooper, 2002). It has been revealed that Emotional Stability significantly predicts

Positive Affect Intensity and Emotional Stability has significant negative prediction trend towards Negative Affect Intensity. Formerly it was inspected that emotional stability is a consistent negative predictor of negative affect (Pierre & Filip, 2003). These findings are also in line with the earlier findings establishing significant positive relationship between Emotional Stability and Positive Affect Intensity ($r = .29$, $p < .01$).

Conclusion

The present study explored the relationship between Affect Intensity (AI) and personality traits. Overall, the findings of the present research suggest that Affect Intensity (AI) does have significant relationship with personality traits. For Positive and Negative Affect Intensity we can conclude that Extraversion, Agreeableness, and Openness/Intellect are the major correlating traits. As far as the gender difference on the Affect Intensity Measure (AIM) is considered women are on the higher side of the construct. It has also been found that Extraversion and Emotional Stability significantly predicts Positive Affect Intensity whereas these traits do not predict Negative Affect Intensity.

Implications

The present study has varied implications such as clinical, social, and educational. The study will enhance knowledge about adolescents' personality and their affect patterns. In educational and social settings, it will assist educators and others to develop better understanding of adolescents and deal them likewise and it can be facilitative in the implementation of the concept. The concept of affect intensity is not well researched in our culture, so this study will help to explore the concept in different populations and further research can be focused upon the identification of other factors influencing affect intensity in adolescents. The concept of affect intensity is linked with the development of psychopathology in a way and therefore be supportive in prevention of psychopathology, if used appropriately. It can also enhance the person's own and other's perspective about health status. Professionals need to look into this concept to better serve the community.

Suggestions

To make this study more generalizable, particularly to various age groups, data should be incorporated using different populations of children and older people. Personality traits and Affect Intensity (AI) can be studied with

respect to psychopathology and other demographic variables like birth order, etc. In conducting a research like this, the participants should be educated about their emotional states and traits to present a clear picture and to reduce the chances of indecisiveness among them.

REFERENCES

Abe, J. A. A., & Izard, C. E. (1999). A longitudinal study of emotional expression and personality relations in early development. *Journal of Personality and Social Psychology*, *77* (3), 566-577.

Cooper, C., & McConville, C. (1993). Affect intensity: Factor or artifact? *Personality and Individual Differences, 14,* 135-143.

Chaudhary, S. (2008). *Relationship between personality traits and procrastination among students*. Unpublished M.Sc. Research Report, National Institute of Psychology, Quaid-i-Azam University, Islamabad.

Dritschel, B. H., & Teasdale, J. D. (1991). Individual difference in affect-related cognitive operations elicited by experimental stimuli. *British Journal of Clinical Psychology, 30* (2), 151-160.

Fleeson, W., Malanos, A. B., & Achille, M. N. (2002). An intraindividual process approach to the relationship between extraversion and positive affect: Is acting extraverted as 'good' as being extraverted? *Journal of Personality and Social Psychology, 83* (6), 1409-1422.

Fujita, F., Diener, E. & Sandvik, E. (1991). Gender differences in negative affect and well-being: The case for emotional intensity. *Journal of Personality and Social Psychology, 61,* 427-434.

Goldsmith, R. E. & Walters, H. (1989). A validity study of the Affect Intensity Measure. *Journal of Social Behavior and Personality, 4,* 133-140.

Goldberg, L. R. (1990). An alternative "description of personality": The Big-Five factor structure. *Journal of Personality and Social Psychology, 59,* 1216-1229.

Goldberg, L. R. (1992). The development of markers of the Big-Five factor structure. *Psychological Assessment, 4*, 26-42.

Gomez, R., Gomez, A., & Cooper, A. (2002). Neuroticism and extraversion as predictors of negative and positive emotional information processing: comparing Eysenck's, Gray's, and Newman's theories. *European Journal of Personality*, *16* (5**),** 333-350.

Kardum, I. (1999). Affect intensity and frequency: Their relation to mean level and variability of positive and negative affect and Eysencks personality traits. *Personality and Individual Differences, 26* (1), 33-47.

Larsen, R. J. (2000). Emotion and personality: Introduction to the special symposium. *Personality and Social Psychology Bulletin, 26*, 651-654.

Larsen, R. J. (2007) Affect intensity: Individual differences in emotional response. *Handbook of Individual Response in Social Behavior*. New York: Guilford.

Larsen, R. J., & Buss, D. M. (2005). *Personality psychology: Domains of knowledge about human nature.* New York: McGraw Hill Companies.

Larsen, R. J., Billings, D., & Cutler, S. (1996). Affect intensity and individual differences in cognitive style. *Journal of Personality, 64*, 185-208.

Larsen, R. J., Diener, E., & Emmons, R. A. (1986). Affect intensity and reactions to daily life events. *Journal of Personality and Social Psychology, 51*, 803-814.

Larsen, R. J., & Diener, E. (1987). Affect intensity as an individual difference characteristic: A review. *Journal of Research in Personality, 21*, 1-39.

Larsen, R. J., & Ketelaar, T. (1991) Personality and susceptibility to positive and negative emotional states. *Journal Personality and Social Psychology, 61* (1), 132-140.

Lucas, E. R., Le, K., & Dyreforth, S. P. (2008). Explaining the extraversion/positive affect relation: Sociability cannot account for extraverts' greater happiness. *Journal of Personality, 76* (3), 385-414.

McCrae R. R., & Costa P.T. (1984). Personality is transcontextual: A reply to Veroff. *Personality and Social Psychology Bulletin, 10*, 175-179.

McCrae, R. R., & Costa, P. T., Jr. (1991). Adding *liebe und arbeit:* The full five-factor model and well-being. *Personality and Social Psychology Bulletin, 17*, 227-232

Pierre, R. J., & Filip, D. F. (2003). The validity of FFM personality dimensions and maladaptive traits to predict negative affects at work: A six month prospective study in a military sample. *European Journal of Personality, 17*, 101-121.

Rusting, C. L., & Larsen, R. J. (1999). Clarifying Gray's theory of personality: A response to Pickering, Corr, and Gray. *Personality and Individual Differences, 26*, 367-372.

Santrock, W. J. (2005). *Adolescence*. (10th. Ed). New York: McGraw Hill Companies.

Saucier, G. (1994). Mini marker: A brief version of Goldberg's unipolar big-five markers. *Journal of Personality Assessment, 63*(3), 506-516.

Saucier, G., & Goldberg, L. R. (2001). Lexical studies of indigenous personality factors: Premises, products, and prospects. *Journal of Personality, 69* (6), 847-880.

Shah, N. A. (2002). *Changing role of women in Pakistan: A study of social and economic activities of women entrepreneurs.* Published Research Report. University of Karachi, Karachi.

Srivastava, S. (2008). *Measuring the big five personality factors*. Retrieved on November 29, 2008 from http://www.uoregon.edu/~sanjay/bigfive.html

Watson, D., & Clark, A. L. (1992). On traits and temperaments: General and specific factors of emotional experience and their relation to five factor model. *Journal of Personality, 60* (2), 441-476.

Williams, L. M. & Barry, J. (2003). Do sex differences in emotionality mediate sex differences in traits of psychosis-proneness? *Cognition & Emotion, 17*, 747-758.

Zelenski, J. M. & Larsen, R. J. (2002). Predicting the future: How affect-related personality traits influence likelihood judgments of future events. *Personality and Social Psychology Bulletin, 28*, 1000-1010.

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EMOTIONAL INTELLIGENCE AND SOCIAL COMPETENCE IN HIGH AND LOW ACHIEVER PAKISTANI ADOLESCENTS

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ABSTRACT

The present study investigated the emotional intelligence and social competence as predictors of the academic achievement in Pakistani adolescents. A stratified sample comprised 200 students, 115 high and 85 low achievers of 11th grade (first year college level), was taken. Equal ratio of girls and boys with the age range 15-19 years (M =17.3, SD =. 82) was drawn from 4 colleges of Lahore (2 girls & 2 boys). Measures used were Urdu versions of BarOn Emotional Intelligence Inventory Youth version (Bar-On & Parker, 2000) and Interpersonal Social Competence Questionnaire (Buhrmester, Furman, Wittenberg, & Reis, 1988). The results indicated emotional intelligence as the primary predictor of academic achievement whereas social competence showed non-significant effect in predicting academic achievement. The findings highlight the strong association of emotional intelligence with the academic performance suggesting that emotional intelligence is more related to measuring cognitive ability than social competence. However it is necessary to replicate these findings in a larger and more heterogeneous sample of students.

Key Words: Emotional Intelligence, Social Competence, Achievement, Adolescents, cognitive ability

INTRODUCTION

The fundamental theories of intelligence like Multiple Intelligences Theory (Gardner, 1983) and Emotional Intelligence Theory (Goleman, 1995; Mayer & Salovey, 1990) pose that success depends on several types of intelligence and the control of emotions; EI could strengthen our current

understanding of both emotions and intelligence (e.g., Sternberg, 2001). It might enrich our sense of the functionality of human emotions and the breadth of human intelligence. EI also directs attention to the role of emotion at home, in schools, and at the workplace and how the effects of emotion may ripple through groups and society (Barsade, 2002; Izard, 2002). Gardner's (1983) theory of Multiple Intelligences opened doors for the theory of Emotional Intelligence. The term Emotional Intelligence appeared in a series of articles by Mayer and Salovey (1990). However, it entered the mainstream only with Goleman's work (1995), who argued that IQ contributes only about 20% to success in life, and rest is done by other forces like emotional intelligence, luck, and social class. He also claimed that unlike IQ, we could teach and improve in children some crucial emotional competencies. Emotionally intelligent people are more likely to succeed in everything they undertake. Teaching emotional and social skills is very important at school, it can affect academic achievement positively not only during the year they are taught, but during the years that follow as well. Teaching these skills may have a long-term effect on achievement (Elias, Gara, Schuyler, Brandon-Muller, & Sayette, 1991).

Mayer and Salovey (1990) defined emotional intelligence as the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions. Another prominent explanation of the emotional intelligence construct is given by Reuven Bar-On, the originator of the term "emotion quotient". Possessing a slightly different outlook, he defines emotional intelligence as being concerned with understanding oneself and others, relating to people, and adapting to and coping with the immediate surroundings to be more successful in dealing with environmental demands (Bar-On, 1997). He argues that emotional intelligence develops over time and that it can be improved through training, programming, and therapy (Bar-On, 2000) while hypothesizing that those individuals with higher than average EQ's are in general more successful in meeting environmental demands and pressures.

Many researches of emotional intelligence and academic achievement have explored the relationship of Grade Point Average (GPA) with EI. Schutte et al. (1998) reported that EI (Assessing Emotions Scale, AES) at the start of the year significantly predicted end-of-year GPA among first-year college students. In series of researches, Parker et al., (2001, 2002) found emotional intelligence to be significant predictors of academic success. Lam and Kirby (2002) investigated the notion that advanced emotional intelligence was correlated with greater

individual performance, often above and beyond that associated with one's level of general intelligence. Researchers found that overall emotional intelligence contributed to individual cognitive-based performance over and above the level attributable to general intelligence, and this relationship was positive.

In an experimental research Jaeger (2003) studied the effects of emotional intelligence instruction on academic performance and concluded that emotional intelligence could be taught or learned and is not a fixed parameter. Drago (2004) explored the relationship between emotional intelligence, student's GPA, cognitive ability scores, and student age in nontraditional college students; his results suggest that academic achievement is related to students' ability to recognize, use, and manage their emotions. This suggests the need to incorporate emotional intelligence curriculum into college degree programs to help students increase their emotional intelligence. In the same vein, Low and Nelson (2004) reported that emotional intelligence skills are key factors in the academic achievement and test performance of high school and college students, respectively. Likewise, Abisamra (2000) also reported a positive relationship between emotional intelligence and academic achievement and suggested for inclusion of emotional intelligence in the schools' curricula.

School teachers and parents always have been concerned about children's academic success and social adaptation both in and out of the classroom. Only recently, however, have researchers realized that a child's social skills and competencies have an impact on these important outcomes. Many researchers explored the influences of the social environment and affective factors on academic achievement identified as early as the 1970s. This line of research continued in the following decades, but the relationship between social competence and academic achievement remained a neglected issue.

Zsolnai (2002) examined the influence of different components of social competence on learning motivation and academic achievement focusing dynamism, dominance, cooperativeness, politeness, scrupulousness, perseverance, emotional control, impulse control, openness, external-internal control attitude and attachments in 6th and 10th grade students. The results revealed that, the importance of intrinsic motivation within learning motivation, manifested in its strong relationship to the variables representing the social factors of personality except for emotional stability and friendliness and openness have the largest impact on each other among social factors. Similarly, Wentzel (1991a, 1991b) examined the relationship between academic performance and

three aspects of social competence: social responsibility, peer relations, and self-regulatory processes in 6th and 7th grade boys and girls. Participants' grades, IQ, sex, ethnicity, school absence, and family structure, socially responsible behavior was found to mediate relations between grades and social competence in peer relations and self-regulatory processes. The results of the study suggest that socially responsible behavior is critical for classroom social competence as well as an important indicator of academic performance in early adolescence.

Teaching emotional and social skills is very important at academic settings, it can affect academic achievement positively not only throughout the year they are taught, but during the years that follow as well. Teaching these skills has a long-term effect on achievement (Elias et al., 1991). Evidence of a positive relationship between social skills and academic performance in young children comes from several types of researches (Wentzel, 1989, 1991a, 1991b). Correlational studies have linked positive intellectual outcomes with tendencies to be pro-social, positive interactions with peers, appropriate classroom conduct, and compliance. Longitudinal studies linking social skills in young children to later academic achievement have been less frequent but have yielded the same general findings.

Rationale

Although emotional intelligence and its relationship with academic success is one of the most newly emerging area of interest for the researchers in the developed countries but scarce research is available in Pakistan. All over the world interest of the educationists as well psychologists is increasing in various aspects of students' life. Emotional intelligence and social competency are among these aspects. The transition from high school to college and university is a stressful event for most young adults. First-year students face the tasks of developing new relationships, modifying existing relationships with family and friends, and learning study habits for a new academic environment. In addition, they have to learn to function as independent adults (e.g., managing time or money). A failure to master these types of tasks appears to be one of the most common reasons for students' dropout rate and failure in the post secondary program.

Petrides, Frederickson, and Furnham (2004) argued that any investigation of the potential effects of emotional intelligence on academic performance must be pursued in a specific context. In essence, the importance of

emotional intelligence on academic achievement has been found to be very significant.

Academic performance most especially of secondary level students has been largely associated with many factors. Most students in secondary schools in Pakistan are daily confronted with challenges of coping with their academics under serious emotional strains occasioned by long walk to, poor environment, and been taught by unmotivated teachers. With this, is an 'uncooperative'-to–study attitude of parents who more often than toil to provide for the needs of the family. These would definitely not augur well for academic success. It is therefore, instructive in the present study to investigate the relationship among emotional intelligence, and academic achievement of students in secondary level. This becomes pertinent in view of the fact that much has not been really achieved in this area in Pakistan.

Although various aspects of social functioning have been associated with academic achievement in young children, little is known about relations between social and academic competence in early adolescence. Thus, this research was designed to study relations between academic performance and some aspects of social competence. Both direct and indirect links between academic achievement and these different aspects of social competence were examined.

In this study, students' grades were the achievement outcome of interest. Grades reflect learning that takes place within the larger social context of the classroom and that requires effort and persistence over long periods of time. In contrast, other measures of achievement, such as performance on standardized tests, assess basic or specialized academic abilities and aptitudes at one point in time without social influences. As such, links between social competence and classroom performance should be stronger and more direct than links between social competence and standardized test performance (Wentzel, Weinberger, Ford, & Feldman, 1990).

Nevertheless, and in spite of the studies reviewed, there is still a need to further investigate the relationship of emotional intelligence to academic achievement most especially in country like Pakistan, where most researchers are yet to show interest in the construct. In this review so far, efforts have been made on what researchers have published on emotional intelligence and social competencies, and how these could impact on academic achievement. Therefore the current study primarily focused:

Hypotheses

- Emotional intelligence would be positively related to the academic achievement.
- Social competence would be positively related to academic achievement.
- High achievers will be high on emotional intelligence and social competence compared to low achievers.

METHOD

Participants

A sample of 200 students included 115 high achiever and 85 low achiever students of first year, in terms of their grades/divisions obtained in HSSC examination, were selected. The data were collected from the volunteers willing to participate in the study from four colleges of Lahore, including GC University and MAO College for boys and Kinnaird College and APWA College for girls. Low and high merit colleges were determined on the basis of their admission criteria. Initially it was intended to obtain 100 high and 100 low achievers from the college with high merit and low merits, but in the final sample 15 students identified as low achievers in the high merit colleges were dropped. The sample comprised equal ratio (50% each) of girls and boys with the age range 15-19 years (M = 17.3, SD = 82). The respondents belonged to different SES classes. It was tried to include students of Science, Arts and General Science in equal ratio, to make sample more representative.

Measures

Informed consent and demographic forms were designed to collect pertinent information. Academic achievement was measured in terms of GPAs'/ percentages of marks obtained in HSS examination. The following measures were used in the current study:

Bar-On Emotional Quotient Inventory Youth Version (EQ-i: YV; Bar-On & Parker, 2000)

This self-report instrument designed to measure emotional intelligence in young people aged 7 to 18 years. It is based on the BarOn model of emotional and social Intelligence. This pertains to the emotional, personal and social dimensions of intelligence. Emotional intelligence comprises abilities of people, adapting to changing environmental demand, and managing emotion. BarOn

Emotional Quotient inventory has two, short and long versions. Long version was used in present study, which consists of 60 items distributed across 7 scales, along with a scale that assumes items response consistency (inconsistency index).

Interpersonal Competence Questionnaire (Burhrmester, Furman, Wittenberg, & Reis, 1988)

The Interpersonal Competence Questionnaire evaluates five dimensions of interpersonal and social competencies. Interpersonal Competence Questionnaire consists of 40 items related to social, peer and interpersonal interaction, competency rate and relationships for teenagers. Each item in the scale illustrates a particular behavior or interpersonal competence attribute of the teenagers. The Interpersonal Competence Questionnaire consists of 40 items with a 5-point rating scale as response categories. It measures five domains of interpersonal competencies: initiating relationships (IR), negative assertion (NA), personal disclosure (PD) emotional support (ES) and Conflict Management (CM). Higher score in any scale indicates the intensity of that trait or particular social competency behavior.

Procedure

As a first step to data collection, permission was sought from the head of the institution for the data collection, who referred researchers to the concerned teacher for the selection of the low and high achievers in their classes. Informed consent was taken from the participants volunteered to participate in the study.

The students from different sections including arts, sciences and general science were referred by the class teachers to obtain all group representation in the data. In the classes purpose of study was conveyed and willing /volunteer students given informed consent forms while explicitly conveying to them the confidentiality of the data.

The questionnaire was administered in the group settings of 15 to 20 students at one time. The questionnaire included 6 pages pertaining informed consent form, Interpersonal Competence Questionnaire, Bar-On Emotional Quotient Inventory Youth Version (EQ-i:YV) and along with demographic questionnaire. Before starting the questioning all students instructed how to fill in the questionnaire. They were also requested to respond on each and every item. Moreover, they were requested to ask any queries they have regarding the

questionnaire and they had the right to withdraw at any time during this research. It took 40-45 minutes to fill in the questionnaire by the respondents.

RESULTS

Psychometric properties for the measures used in the current study were determined. The alpha coefficient computed for EQ-i: YV was found satisfactory, α =. 61, given the fact that, internal consistency of the overall EQ-i varies significantly in different studies, ranging from .76 to .97 (Bar-On, 1997; Bar-On, 2000; Petrides & Furnham, 2001). Cronbach's alpha coefficient for Social Competence Scale Urdu version was also highly significant, α =. 81.

Table 1
Hierarchical Regression Analyses of Predictors of Academic Achievement

Predictors	***B***	***SE***	***β***	***t***	***p***
Step 1 (R= .35, R^2=. 12)					
Emotional Intelligence	9.73	1.85	0.35	5.26	0.0001
Step2 (R= .41, R^2=. 17)					
Emotional Intelligence	9.54	1.80	0.34	5.28	0.0001
Social competence	0.327	.810	0.029	.404	0.687

F (1,199) = 27.62

The results of hierarchical regression results indicated emotional intelligence, as the most significant factor predicting academic achievement, β = .35, t = 5.26 whereas social competence was not the predictor of academic achievement in low and high achiever groups.

Table 2
Step-wise Regression for Predictors of GPA among Subscales of Bar-On i-YV

Predictors	***B***	***SE***	***β***	***t***	***p***
Step 1 (R= .326, R^2= .106)					
Interpersonal Scale	122.07	25.17	0.33	4.9	.0001
Step 2 (R= .356, R^2= .127)					
Interpersonal scale	104.6	26.23	0.28	3.99	.0001
Stress management scale	63.91	29.7	0.15	2.15	.032

F (1, 199) = 23.5, p < .0001, F (1, 99) = 14.3, p < .0001.
Note: GPA= % Marks obtained in HSSC Examination.

To ascertain the predictors among the subscales of EQ-i for academic achievement GPA stepwise regression was carried out which indicated interpersonal and stress management scales as the most significant predictors of academic achievement for low and high achiever groups whereas other excluded variables were intrapersonal, positive impression and general mood scale. The mean scores of high and low achievers on the scores of emotional intelligence and its subscales as depicted in Figure 1 indicated significant difference in the means of high achievers and low achievers on Bar-On-i YV scores

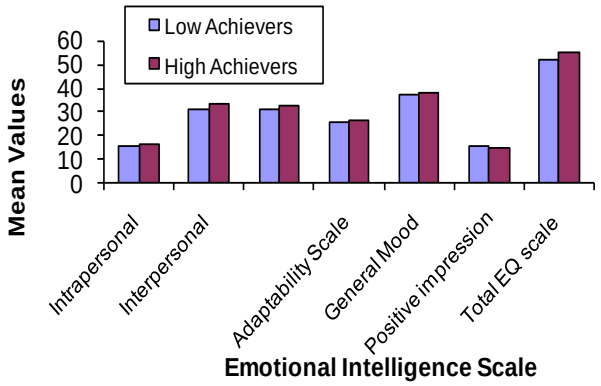

Figure 1: Differences between High and Low Achievers on Bar-On EQ-i YV

This difference is more prominent for EQ total scores and intrapersonal scale, interpersonal and stress management scale as compared to other scales of EQ.

Table 3
Multiple Regression for Predictors of Academic Achievement among Subscales of Social Competence

Predictors	***β***	***t***	***p***
R = .235 R^2 = .056			
Initiating Relationship	.128	1.02	.311
Negative Assertion	.376	2.98	.003
Emotional Support	.256	2.32	.021

F (4, 195) = 2. 98, $p < .02$. Note: Personal Disclosure was excluded variable.

The results of multiple regression analysis indicated that two subscales namely negative assertion and emotional support emerged as two important predictors of academic achievement.

DISCUSSION

The purpose of the current study was to compare high achievers and low achievers among first year intermediate (college) students on emotional intelligence and social competence. Specifically, we sought to determine whether high achievers really differ from low achievers on the emotional intelligence and its five dimensions, and which of the five factors were the best predictors of students' academic performance in both groups. Moreover to determine the relationship of emotional intelligence with social competence and academic achievement was another main objective of the current study.

Given in account the main objective of the study, it was hypothesized that emotional intelligence would positively be related to the academic achievement and social competence. The results had suggested a positive and strong association between emotional intelligence with academic achievement but not with social competence, while partially accepting the assumption. The differences for total emotional intelligence scores were prominent for the low and high achievers and some of its subscales like intrapersonal, interpersonal and stress management scales. The high achievers were high on emotional intelligence overall and the differences on the four subscales of emotional intelligence that interpersonal and stress management and slightly high for the intrapersonal scales for the high achiever students as compared to low achievers.

When the same variables were put in the stepwise regression with other demographic variables of the study, interestingly academic achievement came out as the single significant predictor of student’s performance in higher secondary school certificate examination (HSSC), whereas rest of the variables remained non-significant. It indicated a strong association of student’s emotional intelligence with their grade point averages. In a way it is an indication between their ability (IQ) and emotional intelligence. The emotional skills of understanding and regulation of one’s own self and the environment are very essential to assemble and maintain in student’s life to get through the academic pressures. The results of the current study are in line with the findings of Drago (2004), Low and Nelson (2004) and Abisamra (2000), who indicated that emotional intelligence is the vital predictor of academic achievement.

This finding is also in accordance with the findings of a studies conducted by Parker et al. (2001, 2002), who found that EI variables were very good at discriminating between academically successful students and unsuccessful students. The results further indicated that social competence was not a predictor for the student's performance as well as their emotional intelligence level. The findings of Drago (2004) study demonstrated that emotional intelligence is significantly related to student academic achievement scores, student cognitive ability scores. This suggests the need to incorporate emotional intelligence curriculum into college degree programs to help students increase their emotional intelligence.

Furthermore, the data were analyzed to determine other predictors of academic achievement; interestingly social competence did not show any contribution in academic achievement. When it come to the different dimensions of social competence, we could find significant relationship of negative assertion and social support with academic achievement depicting that availability of the social support plays vital role in the academic achievement of the students which is again somewhat related to the interpersonal dimension of emotional intelligence. An increasing amount of research supports the view that measures of personality can add significantly to the prediction of academic achievement (Petrides, Frederickson, & Furnham, 2004). Bar-On (1997) claimed that his model of emotional intelligence relates to the potential for performance rather than actual performance but the most notable of these claims is that the EQ-i is a more accurate predictor of success than are traditional measures of cognitive ability. In the same vein, Low and Nelson (2004) reported that emotional intelligence skills are key factors in the academic achievement and test performance of high school and college students respectively. Likewise, Abisamra (2000) reported a positive relationship between emotional intelligence and academic achievement. He, therefore, canvassed for inclusion of emotional intelligence in the schools' curricula. Hence the assumption of our study is strongly supported by the findings that high achievers would show better emotional intelligence than low achievers.

Conclusions

We concluded that emotional intelligence was the primary predictor of academic success of the students but not social competence. The differences for total emotional intelligence scores were prominent for the low and high achievers and some of its subscales like intrapersonal, interpersonal and stress management

scales. The high achievers were high on emotional intelligence overall and the differences on the four subscales of emotional as compared to low achievers. Social competence scores were non-significant contributing variable to emotional intelligence and academic achievement of the students. Interestingly social competence did not show any contribution in academic achievement

Limitations and Suggestions

1. The present study needs to be replicated in a larger sample with students from a more diverse range of ethnic backgrounds.
2. Future studies may consider, determining whether this effect can be replicated at other institutions as well. Varying the types of institutions studied (private versus public colleges) would also be beneficial.
3. Future longitudinal studies might also examine the stability of emotional intelligence variables to predict success over longer time periods.
4. Longitudinal investigation can be carried out for determining the association of emotional intelligence and GPA, for the students included in the current study who were fresh students entering in the intermediate classes, there grades at the end of the F.A/F.SC should be investigated again in another study.
5. Future studies may consider the use of multiple measures of emotional intelligence, rather than being restricted to one for comparison.
6. The research in the area of emotional intelligence and academic success is in its infancy and should be regarded with caution. The implementation of emotional intelligence programs to increase the likelihood of academic success is premature.

Implications of the Study

- High school and college students need to be involved in skill development programs focused on the emotional intelligence skills of time management, achievement drive, and commitment ethic; personal responsibility etc.
- Gaps in achievement and retention are more effectively closed by developing skills-based emotional intelligence involving both high school and higher studies.
- High school and college students need to build effective communication skills and healthy relationships through programs emphasizing the emotional intelligence skills of assertion and stress management. Learning to

effectively manage emotions and change is also indicated by emotional intelligence research.

- Positive emotional skill development necessitates learning environments that are personalized (student/learner-centered) and focused on student success.

REFERENCES

Abisamra, N. (2000). The relationship between emotional intelligent and academicachievement in eleventh graders. *Research in education*. Retrieved 27 November, 2008, from http://www.nadasisland.com/ research-intell2.html.

Bar-On, R. (1997). *The Emotional Quotient Inventory (EQ-I): Technical Manual*. Toronto: Multi-Health Systems Inc.

Bar-On, R. (2000). Emotional and social intelligence: Insights from the Emotional Quotient Inventory. In: R. Bar-On and J.D.A. Parker, Editors, *The handbook of emotional intelligence* (pp. 363–388). San Francisco: Jossey-Bass.

Bar-On, R., & Parker, J. D. A. (2000). *The Emotional Intelligence Quotient Inventory Youth Version* (EQ-iYV): *Technical manual*. Toronto: Multi-Health Systems Inc.

Barsade, S. G. (2002). The ripple effect: emotional contagion and its influence on group behavior. *Administrative Science Quarterly, 47*, 644–675.

Buhrmester, D., Furman, W. Wittenberg, M. T., & Reis. H. T. (1988). Five domains of interpersonal competence in peer relationships. *Journal of Personality and Social Psychology 55*, 991–1008.

Drago, J. M. (2004). The relationship between emotional intelligence and academic achievement in nontraditional college students. *The Consortium for Research on Emotional Intelligence in Organizations.* Walden University. Retrieved March, 2008 from http://www.pubmed central.nih.gov/fprender.fcgi.

Elias, M. J., Gara, M., Schuyler, T., Brandon-Muller, L. R., & Sayette, M. A. (1991). The promotion of social competence: longitudinal study of a

preventive school-based program. *American Journal of Orthopsychiatry*, *61(*3), 409-417.

Gardner, H. (1983). *Frames of mind*. NY: Basic Books Inc**.**

Goleman, D. (1995). *Emotional intelligence*. NY: Bantam Books**.**

Izard, C. E. (2002).Translating emotion theory and research into preventive interventions. *Psychology Bulletin*. *128*, 796–824.

Jaeger, A. J. (2003). Job competencies and the curriculum: An inquiry into emotional intelligence in graduate professional education. *Research Higher Education, 44*, 615–39.

Lam, L. T., & Kirby, S. L. (2002). Is emotional intelligence an advantage? An exploration of the impact of emotional and general intelligence on individual performance. *Journal of Social Psychology, 142*, 33–43.

Low, G. R., & Nelson, D. A. (2004). Emotional Intelligence: Effectively bridging the gap between high school and college. *Texas Study Magazine for SecondaryEducation*, Spring Edition. Retrieved, 2008 from http://www. Emotional%20 intelligence.html/

Mayer, J. D., & Salovey, P. (1990). Emotional intelligence. *Imagination, Cognition and Personality, 9*, 185-211.

Parker, J. D. A., Summerfield, L. J., Hogan, M. J., & Majeski, S. (2001). *Emotional intelligence and academic achievement*. A Paper presentation at the Annual Meeting of the Canadian Psychological Association. Quebec City, Quebec.

Parker, J. D. A., Summerfield, L. J., Hogan, M. J., & Majeski, S. (2002). *Emotional Intelligence Academic Success: Examining the Transition from High School to University*. Retrieved, 2008 from http://www.science/ ESCI_Technical_Paper.

Petrides, K. V., Frederickson, N., & Furnham, A. (2004). The role of trait emotional intelligence in academic performance and deviant behavior at school. *Personality and Individual Differences, 36*, 277-293.

Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T. & Golden, C. J. et al. (1998). Development and validation of a measure of emotional intelligence, *Personality and Individual Differences, 25*, 167-177.

Sternberg, R. J. (2001). Measuring the idea of an idea: How intelligent is the idea of Emotional intelligence? In J. Ciarrochi, J. P. Forgas & J. D. Mayer (Ed.), *Emotional Intelligence in Everyday Life*, pp. 187–94. Philadelphia: Psychol. Press.

Wentzel, K. R. (1989). Adolescent classroom goals, standards for performance, and academic achievement: An interactionist perspective. *Journal of Educational Psychology, 81,* 131- 142.

Wentzel, K. R., Weinberger, D. A., Ford, M. E., & Feldman, S. S. (1990). Academic achievement in preadolescence: The role of motivational, affective, and self-regulatory processes. *Journal of Applied Developmental Psychology, 11,* 179- 193.

Wentzel, K. R. (1991a). Social competence at school: Relations between social responsibility and academic achievement. *Review of Educational Research, 6*, 1-24.

Wentzel, K. R. (1991b). Social and academic goals at school: Motivation and achievement in context. *Advances in motivation and achievement, 7*, 185-212.

Zsolnai, A. (2002). Relationship between children's social competence, learning, motivation and school achievement. *Educational Psychology*, *22* (3), 317- 329.

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PREDICTIVE ABILITY OF ABILITY-BASED VERSUS SELF-REPORT EI MEASURES FOR ACADEMIC PERFORMANCE

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ABSTRACT

The study aims at finding if there is a valid increment for the tests of emotional intelligence (EI) in explaining variance in academic performance of university students. In this context, the contention was that 'ability- EI' measure would do better than 'trait EI' measure. A sample of 309 undergraduate students who had completed first year of their BA / BSc program was recruited from a local university. End of the first year GPA served as an index of student academic performance. High school marks (12 years of education) of the students, a cognitive index, correlated strongly with Mayer, Salovey and Caruso Emotional Intelligence Test (MSCEIT) confirming that it embodied ability conceptualization of emotional intelligence unlike Emotional Quotient Inventory (EQ-i) which is known as following the trait model of EI. The two EI measures were uncorrelated. Students of social sciences scored equal to natural sciences on EQ-i and even lower on MSCEIT rejecting our hypothesis that social science students would score more on emotional intelligence. Prediction of academic performance popularly known as GPA was investigated through hierarchical regression analysis using high school marks and EI tests, in order, as predictors. The incremental prediction made by EI tests in explaining variance in students' GPA was however found to be modest (< 5%) both by trait-EI as well as ability-EI measure, after the major predictor i.e. high school marks, which explained 17 % of the variance in GPA, was controlled. The hypothesis of incremental prediction of GPA by the EI measures

was therefore not supported irrespective of the type of EI measures.
Key words: Emotional Intelligence, Trait-EI, Ability-EI, GPA, Incremental Prediction

INTRODUCTION

It was Goleman (1995) who provided link between emotional intelligence and education. Upon evaluation, however, EI as a construct, has been found to be illusive and controversial (Davies, Stankov & Robert, 1998). Several conceptualizations exist about EI and as many measures to gauge it. This article presents a comparative study of the two most popular conceptualizations of EI; the ability-based model of Mayer, Salovey and Caruso (2002) and the trait model of Bar-On (2004). The former is cognitive and performance test whereas the latter is a self report inventory. The literature abounds in critical reviews of both (Rooy, Wiswesvaran & Pluta, 2004; Amelang & Steinmayr,2006; Parker, Sumerfeldt, Hogan & Majeski, 2004).

Long ago, David Wechsler (1940) argued that the construct of intelligence includes both cognitive as well non-cognitive factors such as feelings and emotions. Modern neuropsychological research has proved the existence of emotional centers in the brain which coexist with the cognitive reasoning centers (Posner & Patterson, 1990). Izard (1993) believed that emotions represent a system separate from intellect and support distinct competencies in facilitating human functioning. Study of nervous system and brain physiology inform us that emotions enable reason to function i.e. emotions can set goals, towards which reason can work (Ben-Zee'v, 2000; McPhail, 2004). For example, some intelligent students might find it hard to control emotional impulses, such as exam anxiety and fail to perform well. Mayer, DiPaolo and Salovey (1990) observed that moods and emotions subtly but systematically influence cognitive strategies involved in problem solving. Emotional swings may facilitate the generation of multiple future plans and positive emotions may alter memory organization to integrate diverse ideas in a better way. It is a common knowledge that emotions and moods are instrumental in motivating and assisting performance at complex intellectual tasks (Petrides, Frederickson, & Furnham, 2004).

Salovey and Mayer's (1997) conception of EI falls in the realm of intelligence theories. Basically MSCEIT applies abstract reasoning aspects of

intelligence in processing emotional information. Its creators (Mayer, Caruso & Salovey, 1999) claim that the MSCEIT avoids redundancy with existing personality measures unlike a host of other measures of EI that follow a 'mixed model'.

On the other hand, trait EI model of Bar-On, more specifically called *Emotional Social Intelligence,* refers to self perception about being expressive and understanding of self and others' emotions. This trait emotional approach employs a personality framework in measurement style. Other scales of such a type are: the Swineburne University Assessment Intelligence Test (SUEIT), the Six Seconds Emotional Intelligence Assessment (SEI) and the Schutte Self-Report Emotional Intelligence Test (SSEIT). All of these measures, according to Petrides, Furnham, and Mavroveli (2007) tap 'trait emotional self efficacy'. Several studies found that males score higher in the intrapersonal, adaptability and stress management domains while females score more in the interpersonal and mood domain (Ahmad, 2010; Mayer et al., 2002; Goldberg, Matheson, & Mantler, 2006). The trait EI encompasses various dispositions from the personality domain, such as empathy, impulsivity and assertiveness as well as elements of 'social intelligence' and is therefore found correlated with the personality measures (Zaider, Matthews & Robert, 2004; Ahmad, 2010).

The EQ-i and the MSCEIT embody marked differences about concept and measurement of EI. Besides, standard limitations; deception, social desirability, and image management plague self report measures, hence it would be very untraditional to tap EI, generally acclaimed as a form of intelligence, through self report. Alternatively, asking respondents to actually perform on a set of emotions related tasks / questions by working out an appropriate solution (the 'right' answers as in ability testing) is a convincing and compelling endeavor of some objective criterion to rely on. However, there are issues of scoring MSCEIT since there is no universally accepted body of knowledge about emotional competence that can be used for scoring EI. EI remains largely a context and culture dependent nature of competence (Zeidner et al., 2004).

Research examining relationship between self-report and ability measure of general intelligence yields correlations as low as .30 (9% of variance in one variable accounted for by the other), indicating that people are generally extremely poor at providing accurate estimates of their actual intelligence levels (Mayer, Salovey & Caruso, 2000; Zeidner et al., 2004). In the specific case of emotional intelligence, such estimates may be even more misleading given the

subtleness of the construct, its cultural variations and manifestation and an individual's integrity of self estimation.

Perez, Petrides and Furnham (2005) suggest that trait and ability conceptualizations of EI are distinct constructs: Trait EI or "emotional self-efficacy" and ability EI or "cognitive–emotional ability", respectively. Methods of measurement further complicate the matter: One relies on external or logical appraisal of performance, the other involves internal appraisal of performance that can be biased. (Matthews, Zeidner & Robert, 2002). Several studies assessing the relation between the MSCEIT and the Emotional Quotient Inventory (EQ-i) have noted low correlations (.12 - .21) between the two measures (Brackett & Mayer, 2003; Mayer & Salovey, 2002).

Academic performance, as a complex student behavior, underlies several ability factors e.g. memory, previous knowledge as well as non-ability or psychological factors such as motivation, interests, and emotions, to name a few. Educational psychologists and researchers have been interested in finding other predictors alongside 'general intelligence' that could explain additional variance in academic performance. EI could well be another potential predictive factor. Some researchers even suggested that emotional intelligence was a better predictor of performance than general intelligence (Bar-On, 2004; Goleman, 1995; O'Neil, 1996; Qualter, Gardner & Whiteley, 2007) while others take EI as adjunct to 'general intelligence' in associating with academic achievement (Lam & Kirby,2002; Parker et al., 2004). Ashkanasy and Dasborough (2003) and Brackett and Mayer (2003) found school grades correlating with EI (r = .20 - .25). Parker et al. (2004) added to it saying that EI was differentially associated with success in different educational subjects: It was better in predicting success in English than in Math or Sciences. Their assumption was that educational programs in specific disciplines promoted different abilities and traits conducive to the development of emotional intelligence. For example social science could promote EI more than natural sciences since the former deal with people and their interpersonal issues. Gumora and Arsenio (2002) held that certain aspects of EI (e.g. emotional regulation) significantly contributed to grade point averages of middle school students, over and above the contribution made by cognitive abilities. In contrast, Barchard (2003) found that measures of EI were unable to add significantly to the incremental predictive validity for academic performance over and above cognitive and personality variables. Such a mix of research findings does have theoretical or methodological roots, but what is abundantly

clear is the need for further rigorous empirical inquiry in this area. The present study provides a different national context to the western literature.

Rationale for the Present Study

In view of the mixed findings, it would be worthwhile to investigate ability-EI and trait-EI issues in the context of Pakistan. The present study employs two popular approaches to measuring EI; the MSCEIT and Bar-On EQ-i as predictor of academic performance at university level.

Second, strong research findings have appeared regarding prediction of academic performance by EI measures for high school students than for more heterogeneous university population studying diverse courses (Parker et al., 2004). Our contention is that social sciences curricula would foster social and emotional intelligence in students more than the natural sciences.

Hypotheses

1. Students majoring in social sciences subjects would score significantly higher on EI than those in natural sciences.
2. EI measures would relate with GPA more in social sciences than in natural sciences.
3. Ability-based measure of EI namely the MSCEIT would incrementally predict academic performance of university students more than the trait measure of EI, the EQ-i, over and above the previous high school marks.

METHOD

Participants

A sample stratified across disciplines was drawn from B.A / B.Sc. (Hons.) students who had recently completed first year of their studies. First year university timetable was used as a chart depicting student population. B.Sc. program offered major in chemistry, physics, zoology and microbiology whereas B.A offered major in economics, history, political science and psychology. All the sections / classes of students studying these majors comprised the student population for this study. Then one section / class each 6was randomly selected for each major. Students of the selected sections were requested to participate in this research on ‘EI and students’ grades’. They were briefed about the study and

consenting participants were tested in their regular class hours in groups. Sixteen protocols were found incomplete and were thus excluded leaving the remaining data of 309 students for analysis (BA = 157, BSc = 152). Subject-wise details of the participants were: 30(Economics), 26 (History), 48 (Pol. Science), 53 (Psychology), 52 (Chemistry), 48 (Physics), 24 (Zoology), and 28 (Micro-Biology). The mean age of the participants was 20.2 years (*SD* = 3.2). About 57 % of the participants were females.

Measures

Bar-On Emotional Quotient Inventory (EQ-i, 2004)

The adult version of EQ-i is a 125 item self-report inventory that conceptualizes EI as a trait. It has 5 composite scales and 15 subscales. Item are responded on a five point scale. Examples: 'It's hard for me to enjoy life' 'I know how to deal with upsetting problems'. Cronbach Alpha ranged from a low of .69 (social responsibility) to a high of .86 (self-regard) sub scales, and an overall alpha of .97. On the present data the alpha ranged from .57 (Stress management) to .85 (Interpersonal), and an overall value of .91.

Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT, 2002)

The MSCEIT, as a measure of EI, was developed in the tradition of ability testing. Questions are in the MCQ form: The pictorial and verbal contents are used as stem followed by five answers and the test-taker is to find the best answer. The test bears four dimensions; perception of emotions, use of emotions to facilitate thinking, understanding emotions and management of emotions. It provides scores on the four dimensions / branches of the test and an overall score. The test has high full scale reliability (α = .93).

Procedure

The EQ-i was administered followed by MSCEIT in groups after the class hours. The students were allowed one hour to complete MSCEIT which was 10 minutes more than the standard time since English was the second language of the participants. A pre-test group administration of the MSCEIT on 10 students followed by their feedback and comments revealed that the text of the test was difficult for them. A glossary of the difficult words was therefore provided to the participants as a part of the test material so that they could

consult the glossary to go on with the test. A local consensus key was used for scoring MSCEIT such that weight for different options / answers for an item was based on the actual response rate for Pakistani students (Aslam, 2009).

Record of GPA was collected from the office of the Registrar. It represents the sum of all the marks attained in quizzes, assignments, term papers and final examination in a course. Marks earned in nine courses taught in the first year determined GPA.

RESULTS

Descriptive statistics presented in Table-1 indicates that in terms of response rate and other psychometric characteristics the two EI measures faired well in the context of Pakistan. The mean score on EQ-i was nearly same between students of social sciences and natural sciences however, the latter scored moderately higher on MSCEIT (P <.01, d = 0.2). The Coefficient alpha for both was in .90s. Women scored higher than men on both EQ-i (p < .01) and MSCEIT (p < .001).

The two measures were found to be independent of each other (r = -.12) thus EQ- i conceptualization seems different from that of MSCEIT. The former was not correlated with high school marks (r =.00) unlike the latter (r =.22, p < .01) supporting 'ability' or 'performance' conceptualization of MSCEIT. Since GPA is popularly categorized as high, medium and low, students falling in the three groups were tested on ANOVA statistics. It was found that MSCEIT scores were more discriminating than EQ-i scores among the three GPA groups (Table-2). Statistics indicated a good fit between the model and the data. Post hoc analyses showed systematic difference in direction i.e. high, to medium to low. On the whole, the results supported the hypothesis that ability-EI construct would be more relevant to GPA than the trait-EI construct (Table-3).

Table 1
Descriptive Statistics for Study Variables (N = 309)

Measures	Natural Sciences (n = 152) *M (SD)*	Social Sciences (n = 157) *M (SD)*	Men (n = 131) *M (SD)*	Women (n = 175) *M(SD)*
EQ-i	361.54 (52.65)	369.11 (45.79)	359.21 (47.69)	367.68 (50.82)
MSCEIT	46.91 (5.69)	44.60 (6.30)	43.12 (5.65)	48.39 (5.26)
HSM	72.02 (5.03)	69.06 (6.80)		
First year GPA	2.87 (.34)	2.73 (.46)		

HSM = High School Marks in %, GPA= Grade Point Average (Max. = 4.00)

Table 2
Correlation of EI measures with the Academic Indices: GPA & HSM

Measures	GPA	HSM
EQ-i	.20	-.00
MSCEIT	.44	.22
HSM	.48	-----

HSM = High School Marks in %, GPA= Grade Point Average

Table 3
ANOVA Indicating Differences between Levels of GPA and EI Scores

Sources	*SS*	*df*	*MS*	*F*	*P*	Post-hoc diff.
EQ-i						
Between Groups	18184	2	9092	4.9	.01	Hi>Lo, Md > Lo
Within Groups	567457	306	1854			
MSCEIT						
Between Groups	572	2	286	11.3	.001	Hi>Md>Low
Within Groups	7646	306	25			

Table 4
Emotional Intelligence as Predictor of Academic Performance

Predictors	N	*B*	*R2*	*R2*Δ
Natural Science	157			
Step-1				
HSM		.40	.16	
Step-2				
HSM		.38	.17	.01
EQ-i		.09		
Step-2,a				
HSM		.32	.19	.04
MSCEIT		.20		
Predictors	**N**	***B***	***R2***	***R2*Δ**
Social Sciences	152			
Step-1				
HSM		.59	.35	
Step-2				
HSM		.53	.39	.04
EQ-i		.21		
Step-2,a				
HSM		.35	.40	.05
MSCEIT		.18		

MSCEIT = Mayer, Salovey & Caruso Emotional Intelligence Test; HSM= High School Marks; EQ-i=Emotional Quotient Inventory;Step-2,a = Step-2, alternative

In terms of prediction, a two step hierarchical regression analysis was run entering High School marks in the first step and EI marks in the second. The regressions were run separately for the natural sciences and the social sciences students. High School marks emerged as the major predictor, as expected, explaining 17% of the variance in GPA in the natural sciences and 35% in the social sciences. Next, both EQ-i and alternatively MSCEIT scores were entered in the equation. The EQ-i additionally explained up to 4 % variance in the GPA of students. The MSCEIT explained a bit higher variance (5%). Prediction from psychological measures to outcome variables, for complex behavior, is considered satisfactory in the .10-.20 range, good in the .20- .30 and still better

when higher than .30 (Meyer et al., 2001, p. 134). In view of this guideline, EI can not be taken as predictive of university GPA since it contributed very little once high school marks, the major predictor, was controlled (Table 4).

DISCUSSION

Students in natural sciences scored significantly higher than those in social sciences on ability based EI, though the two groups were at par on the trait-EI (Table 1). Besides, the natural science students also had an edge over their counterparts regarding high school marks and a subsequent university GPA. There appears thus a stronger link between ability-EI and scholastic achievement. The MSCEIT is therefore correlated with high school marks (r =.22) unlike EQ-i, and still more with GPA (r = .44) The data therefore supports the ability or performance bases of conceptualization in MSCEIT. The two EI measures are different entities (r = -.12) between themselves.

Though ability-EI relationship with academic performance is strong (r =.44) it showed an increase of just about 5% in predicting GPA , once the effect of High School Marks is controlled. This holds both in the case of natural as well as social sciences. Whereas the ability conceptualization of MSCEIT is endorsed in terms of its correlation with academic performance, its efficacy to predict academic performance is curtailed due to such overlapping. In other words MSCEIT does not have a significant advantage in incremental prediction validity. High school marks remained a strong predictor (β = .40) of university GPA, traditionally enough, both being scholastic measures. The psychological dimension of emotional intelligence did not hold any sizable incremental ground in predicting academic outcome for social sciences or natural sciences. Similar results were found in a recent study in the West among college students (Fabio & Plazzeschi, 2009), though the ability-EI comparatively accounted for a percentage of incremental variance greater than the self report EI. A little back, O'Conner and Little (2003) produced similar results and held that EI was not a strong predictor of academic achievement regardless of the type of instrument: MSCEIT or EQ-i. Their study was however limited to 90 students; 90% Caucasian and 10 % other ethnicities.

A caveat is in order however: GPA as an outcome variable had a narrow range (2.00- 3.90, skew -1.05) in this study, since admission in colleges is very competitive, and this could have deflated the relationship between the predictors and the outcome criterion.

In conclusion this investigation supports the ability conceptualization of MSCEIT. The MSCEIT however, does not provide significant unique variance in predicting academic performance of university students over and above the tradition measure of previous scholastic record. The effects of EQ-i are more negligible. These results echo those of several others studies undertaken in the West. The construct of emotional intelligence therefore appears 'elusive' and its application warrants caution.

REFERENCES

Ahmad, I. (2010).Trait emotional intelligence as predictor of academic performance. *Journal of Social and Clinical Psychology, 8* (1), 54-65.

Amelang, M.,& Steinmayr, R. (2006). Is there a validity instrument for the test of Emotional intelligence in explaining the variance in performance criterion? *Intelligence, 34,* 459-468.

Ashkanasy, N.M., & Dasborough, M.T.(2003). Emotional awareness and emotional intelligence in leadership teaching. *Journal of Education in Business, 79*, 18-22.

Aslam, S. (2009). *Emotional intelligence and academic achievement: A comparison of self report and performance based measures.* Unpublished M-Phil Thesis, G C University, Lahore.

Barchard, K. A. (2003). Does emotional intelligence assist in the prediction of academic success? *Educational and Psychological Measurement, 63* (5), 840–858. Retrieved August 29, 2008 from Science direct database.

Bar-On, R. (2004). *Bar-On Emotional Quotient Inventory EQ-i.* Toronto: Multi-Health Systems.

Ben-Ze'ev(2000). *The subtlety of emotions*. Cambridge,MA;MIT Press.

Brackett, M.A., & Mayer, J.D. (2003). Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. *Personality and Social Psychology Bulletin, 29* (9), 1147-1158. Retrieved January 15, 2008, from *DOI*: 10.1177/0146167203254596

Davies, M., Stankov, L., & Robert, R.D. (1998). Emotional Intelligence: In search of an elusive construct. *Journal of Personality and Social Psychology, 75* (4), 989-1015. Retrieved July, 31, 2008, from the PsycARTICLES database.

Fabio, A. D., & Palazzeschi, L. (2009). An in-depth look at scholastic success: fluid intelligence, personality traits or emotional intelligence? *Personality and Individual Differences, 46* (5), 581-585. Retrieved May 24, 2009, from http://scholar.google.com

Goldberg, I., Matheson, K. & Mantler, J. (2006). The assessment of emotional intelligence: A comparison of performance-based and self-report methodologies. *Journal of Personality Assessment, 86*, 23-35. Retrieved July 8, 2008, from http://scholar.google.com

Goleman, D. (1995). *Emotional Intelligence*. New York: Bantam Books.

Gumora, G., & Arsenio, W.F. (2002). Emotionality emotion regulation, and school performance in middle school children. *Journal of School Psychology, 40*, 395-413.

Izard, C.E. (1993). Four systems for emotion activation: Cognitive and non-cognitive processes. *Psychological Review, 100*, 68-90.

Lam, L. T. & Kirby, S. (2002). Is emotional Intelligence an advantage? An exploration of the impact of emotional and general intelligence on individual performance. *The Journal of Social Psychology, 142*, 133-143.

Matthews, G., Zeidner, M., & Robert, R. D. (2002). *Emotional intelligence: Science and myth*. London: The MIT Press.

Mayer, J. D., Caruso, D.R., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence, 27(4),* 267-298. Retrieved January 8, 2008, from the PsycARTICLES database.

Mayer, J. D., Caruso, D.R., & Salovey, P. (2000). Models of emotional intelligence. In R. Sternberg (Eds.), *Handbook of Intelligence* (pp.396-420). Cambridge, UK: Cambridge University Press.

Mayer, J. D., DiPaolo, M. T., & Salovey, P. (1990). Perceiving affective content in ambiguous visual stimuli: A component of emotional intelligence. *Journal of Personality Assessment, 54,* 772-781.

Mayer, J.D., Salovey, P., & Caruso, D. (2002). *Mayer, Salovey-Caruso Emotional Intelligence Test.* User's Manual. Toronto: Multi-Health Systems.

McPhail, E.M. (2004). An emotional response to the state of accounting education; Developing accounting students' emotional intelligence. *Critical Perspective on Accounting, 15,* 129- 148.

O'Connor, R. M., & Little, I. S. (2003). Revisiting the predictive validity of emotional intelligence: Self-report versus ability-based measures. *Personality and Individual Differences, 35,* 1893–1902. Retrieved July 18, 2007, from http://scholar.google.com

O'Neil, J. (1996). On emotional intelligence: a conversation with Daniel Goleman. *Educational Leadership, 54* (1), 6-11. Retrieved July 11, 2008 from http://ohioline.osu.edu/flm01/pdf/FS15.pdf

Parker, J. D. A., Summerfeldt, L. J.,Hogan, M. J.,& Majeski, S. A.(2004). Emotional intelligence and academic success: Examining the transition from high school to university. *Personality and Individual Differences, 36,* 163-172.

Perez, J.C., Petrides, K.V., & Furnham, A. (2005). Measuring trait emotional intelligence.In R.Schulze & R.D. Roberts (Eds.), *Emotional Intelligence: An International Handbook* (pp.180-202). Gottingen, Germany: Hogrefe & Huber. Retrieved May 12, 2007, from http://psychometriclab.com/

Petrides, K. V., Frederickson, N., & Furnham, A. (2004). The role of trait emotional intelligence in academic performance and deviant behaviour at school. *Personality and Individual Differences, 36,* 277–293. Retrieved July 16, from Emerald data base.

Petrides, K.V., Furnham, A.& Mavroveli, S. (2007). Trait emotional intelligence: Moving forward in the field of EI. In G. Matthews, M. Zeidner, & R.

Roberts (Eds.), *Emotional Intelligence: Knowns and Unknowns.* Oxford, UK: Oxford University Press. http://www.psychometriclab.com/

Posner, M.I. & Patterson,S.E. (1990). The attention system of human brain. *Annual Review of Neuroscience,13,* 25-42.

Qualter, P., Gardner,K. J., & Whiteley, H. E.(2007). *Emotional intelligence: Review of research and educational implications.* [Electronic Version] Oxford: Blackwell Publishing Limited.

Rooy, V.L., Wiswesvaran, C. & Pluta, P. (2004). An evaluation of construct validity: What is this thing called emotional intelligence? *Human Performance, 18,* 445-462

Salovey, P. & Mayer, J. D. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Implications for educators* (pp.3-31). New York: Basic Books

Wechsler,D.(1940). Non-intellective factors in general intelligence. *Psychological Bulletin, 37,* 444-445.

Zeidner, M., Matthews, G., & Robert, R. D. (2004). Slow down you move too fast: Emotional intelligence remains an "elusive" intelligence. *Emotions, 1,* 265-275. Retrieved January 14, 2008, from the Psyc ARTICLES database.

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CONTRIBUTION OF BASIC PSYCHOLOGICAL NEEDS IN PREDICTING PSYCHOLOGICAL WELLBEING

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ABSTRACT

The present study aimed at to explore the three types of basic psychological needs as contributory factors in predicting psychological wellbeing of people. The sample consisted of 436 adults (218 males and 218 females) aged 23 – 42 years taken from Multan. Basic Psychological Needs Scale (Deci & Ryan, 2000) and Psychological Well Being (Ryff & Keyes, 1995) were used to measure different basic psychological needs and wellbeing respectively. Employing Regression Analysis, Two-Way ANOVA, and Independent Sample t-test, results indicated that people's psychological needs for autonomy, competence, and relatedness have significant impact on their psychological wellbeing. Gender differences showed that males' psychological wellbeing regressed upon the satisfaction of their needs for autonomy and competence while females' psychological well being was associated with their need for relatedness. It is concluded that higher the score on psychological needs predict the higher score on psychological wellbeing. If certain programs are arranged to enhance the level of autonomy, relatedness, and competencies then it would reflect itself in the improvement of psychological wellbeing of individual in the organizational, social, and clinical context.

Key Words: Quality of Life, Wellbeing, Belongingness, Effective Functioning, Integration

INTRODUCTION

Homo sapiens are endured with some basic biological and psychological needs. Biological needs refer to the needs such as hunger, thirst, or sex that emanates either from physiological imbalance or the tension experience by the organism. Psychological needs are essentially different from biological needs but psychological needs are much more important to understand the motivated behavior of the human beings. Psychological needs facilitate the organism to indulge in those activities that will satisfy the psychological needs of human beings. Fulfillment of these needs is prerequisites for the proper functioning of human beings and their psychological wellbeing (PWB); a state in which an individual is able to use his or her cognitive and emotional capabilities, function in society, and meet the ordinary demands of everyday life with a continuous growth (Reeve, 2005).

Psychological needs of the human beings are also part of the human nature. These needs have been identified as autonomy, competence, and relatedness (Reeve, 2005). Operationally defined, autonomy is the need to experience choice in the initiation and regulation of behavior, and it refers to the one's wish to exercise one's freedom rather than being determined externally (Deci & Rayan,1985a). Competence refers to the skills and capacity of the individuals to deal effectively with the environment, and to be able to accept challenges (Deci &Rayan, 1985a). Relatedness is the need to be considerate with other people and also to develop healthy and warm interpersonal relationship (Guisinger & Blatt, 1994; Baumeister & Leary, 1995).

Individuals vary in the strength of different psychological needs. Paradigmatically, need strength is measured through their subjective state of wellbeing and proper functioning in the environment (McClelland & Burnham, 1978). Considering the importance of these basic psychological needs in everyday life, it is apparent that autonomy, competence, and relatedness shape the way in which people understand and interpret their social world. These psychological needs of autonomy, competence, and relatedness facilitate the people for their aspiration for learning, growing, and developing (Bruner, 1990).

Self Determination Theory (SDT) articulates that satisfaction of basic psychological needs provides the basis for PWB and intrinsic aspiration, and also people need to feel competent and autonomous to keep and develop their PWB and intrinsic motivation (Baumeister & Leary, 1995). More Precisely, SDT

theorizes that individuals when experience feelings of gratification for the needs of relatedness and competence, they internalize it, and then is going to determine their PWB. Stated differently, satisfaction of the need for relatedness and belongingness facilitate the individuals to internalize the values of their social world (Baumeister & Leary, 1995).

SDT posits that satisfaction of these needs is vital for the development and integrity of the Homo-sapiens (Ryan, Sheldon, Kasser, & Deci, 1996). From this angle psychological health is depended upon the extent to which the needs are satisfied. By utilizing this perspective, these needs for competence, autonomy, and relatedness are considered important for every individual, therefore SDT research concentrate not on the outcomes of the strength of these basic needs, but rather on the outcomes of the extent to which people are able to fulfill the needs within their social context (Deci & Ryan, 2000).

Reis, Sheldon, Gable, Roscoe, and Ryan (2000) analyzed the satisfaction of these needs in their social environment. Working with individual-difference and daily-diary procedures they concluded that well-being of the person is depended upon the satisfaction of these needs. They found that variables of independency, effectiveness, and belongingness determine independently the PWB of people. The fluctuations in the fulfillment of these needs independently predicted fluctuations in PWB.

Ryan (1991) also provided evidence for the confirmation of the importance of the satisfaction of these needs for the healthy development of individuals and their psychological state of wellness In the last analysis, he concluded that better quality of life is related to basic needs paradigms, with an aim at how satisfaction of these needs leads to the necessary psychological basis for the empowerment, interpretation, and meaning-making processes that is so essential eudemonic well being.

With respect to SDT paradigm, relatedness is a part of general tendency to organize them, and in these context individuals as social organisms function optimally when they are operating within a larger social entity (Ryan, Kuhl & Deci, 1997). Relatedness leads to responsibility for the simple reason that accepting responsibility for the betterment of other people is a core element of relatedness. Autonomy and relatedness are combined in the process of socialization that open for us the choices ensuring the responsibility for the PWB of other individuals (Deci & Rayan, 1985a). Ryan and Deci (2000) reported how

autonomy may be positively correlated with connectedness and PWB. Autonomy means being with deliberate intention, taking full responsibility of one's actions, and also acting authentically, and that one is aware of one's functioning. It does not mean to be alone, not depending upon, or being independent of others. All these factors leave people with healthy functioning in life.

Hahn and Oishi (2006) also found in their study, autonomy, relatedness, and competence needs when are satisfied predict PWB. Being a caring person and having a good relationship with others, is a key feature of a well-adjusted and mature person. Omodei and Wearing (1990) analyzed gratification of needs in relation to PWB. They reported that the fulfillment of these needs was related to PWB. Sheldon, Ryan, and Reis (1996) also assessed the connection between psychological needs and emotional well-being. They explored that the atonement of needs for autonomy and competence was associated with PWB both at trait and state levels. Simultaneously, the level of atonement of competence and autonomy needs was prognostic of everyday performance and PWB. Sheldon et al.'s findings were extended by Reis et al. (2000) to the gratification of need of relatedness. They contended that autonomy, competence, and relatedness are the most vital psychological needs related with PWB, and that the atonement of significant psychological needs is vital in predicting PWB.

Keeping in view the utility of the concept of needs especially psychological needs and its emphasis on the active, growth- oriented nature of the human organisms and healthy functioning in terms of PWB, the current study was designed to investigate the satisfying basic psychological needs and its positive contribution in enhancing the PWB of people living in Pakistan, since all the reviewed literature has been found related to western cultures, and no one study was conducted on the afore mentioned topic in Pakistani cultural context. It was assumed that basic psychological needs for autonomy, competence, and relatedness will predict the PWB. Moreover, the assessment of effect of psychological needs on PWB in relation to gender differences was another objective of the present study. It was further hypothesized that male and female adults' PWB will be associated with different types of psychological needs.

METHOD

Participants

The sample consisted of 436 adults (218 males and 218 females) ranging in age from 23 to 42 years working in different organizations residing in Multan.

All the participants were of different educational levels ranging from matriculation to post graduation. To select the sample the convenience sampling technique (non probability approach) was used.

Measures

Following instruments were used to collect the data after adaptation and Urdu translation of them. The whole process is described in *Procedure* section.

Basic Psychological Needs Scale

The Basic Psychological Needs Scale (Deci & Ryan, 2000) is 21 items scale measuring the three types of needs for competence, autonomy, and relatedness. It is a 7-point ratting scale. To score the items on each need subscale, the items identified with (R) are reverse scored firstly, and then the scores on all items in each subscale are averaged out. The alpha reliability co-efficient of translated scale is found .66, and validity co-efficient is .71.

Psychological Well-Being Scales

Psychological Well-Being Scales (Ryff & Keyes, 1995) is a 42 –items self-report scale to assess individual's PWB. It consists of a series of statements reflecting the six areas of psychological well-being: autonomy, environmental mastery, personal growth, positive relations with others, and purpose in life, and self-acceptance. Responses are obtained on 6-point rating scale ranged from 1 indicating 'disagree strongly' to 6 indicating 'agree strongly'. Twenty two items on scale are negatively stated and are reverse scored before calculating a whole score on each subscale. High score on each of the subscale indicate high PWB on that domain. To obtain the total score on measure, the scores on each item are averaged. Higher scores on scale indicate greater PWB. The translated scale has alpha reliability co-efficient of .68, and validity co-efficient of .70

Procedure

The study was consisted of two parts.

Part I

The purpose of part I of the study was to adapt and validate the instruments to be used in main study. The relevance of all the instruments was

firstly checked by a sample of 20 educationists. They were asked to examine all the statements carefully and rate which items are relevant to our culture. Analysis of responses revealed that all the statements were fairly relevant to our culture. To translate the original scales, Back Translation Method was adopted. This process of translation was completed into following three steps.

Step 1 (English to Urdu Translation): The bilingual educationists were asked to translate the statements in such a way that Urdu translation of each statement could convey the same meanings as the statements in English do.

Step 2 (Back Translation from Urdu to English): Back translation technique was used as a method of reducing errors and biases in translation. The scales translated into Urdu were given to another bilingual sample. They were unfamiliar with the original versions of the scales and were requested to translate Urdu version of scales into English as much as accurate translation as possible conveying the maximum similar meanings.

Step 3 (Reliability and Validity): The reliability and validity of all scales were determined in this step. All the scales were administered to a sample (N = 50). For the determination of reliability and validity Cronbach's Alpha Coefficient and cross language validity was computed.

Part II

In part II of the study, the participants were firstly informed about the purpose of the study and then were given the instructions about how to fill the questionnaires. A booklet containing the measures of Basic Psychological Needs and Scale along with consent form and demographic information sheet was given to each participant. They were assured that all the information would be kept strictly confidential and would be used for research purposes only. Averaged score on subscales of PWB scale was used to indicate a total score for PWB. Regression for the analysis of impact of basic psychological needs on PWB, Two Way ANOVA for analysis of interactive effect of gender and psychological needs on PWB, and Independent Sample t-test for the analysis of gender comparison was computed using SPSS (Statistical Package for Social Sciences) for the analysis of the data collected from participants. (Note: For the purpose of conducting two way ANOVA; from the pool of 500 participants, only those participants were selected who were high on one need and thus categorized as having either need of Autonomy, competence or relatedness).

RESULTS

This study was focused on to know the effects of psychological needs on wellbeing. To see the effects of psychological needs on wellbeing regression analysis (Table 1) was computed, and to see the main effect of interaction of gender and psychological needs Two Way Analysis of Variance for 2(Gender of Participants) × 3(Psychological needs) was computed (Table 2). For gender analysis in relation to the association of psychological needs with PWB, regression analysis was computed for both male and female scores on variables under study (Table 3 & 4) and for the analysis of gender differences, independent sample t-test was employed (Table 5).

Table 1

Regression Analysis Showing Impact of Psychological Needs for Autonomy, Competence, & Relatedness on PWB

Predictors	*B*	*Std. Error*	*Beta*	*t*	*p*
(Constant)	4.50	2.21		2.99	.032
Autonomy	.18	.06	.59	1.98	.01
Competence	.15	.06	.44	2.21	.02
Relatedness	.22	.03	.66	3.72	.001

R^2 = 0.68, Adjusted R^2 = 0.61, F (2, 433) = 101.32, p < .01

Table 2

Two Way ANOVA for 2(Gender) × 3(Psychological Needs) for the Scores on Wellbeing

Source	*df*	*F*	*p*
Gender	1, 431	5.215	.03*
Psychological Needs	2, 431	2.479	.04*
Interaction Gender * Needs	1, 431	2.723	.03*

*p < .05

Table 3
Regression Analysis Showing Impact of Male Adults' Psychological Needs on their PWB

Predictors	*B*	*Std. Error*	*Beta*	*t*	*p*
(Constant)	3.81	1.77		1.95	.01
Autonomy	.22	.09	.71	1.99	.02
Competence	.25	.08	.53	2.02	.01
Relatedness	.19	.03	.61	0.89	.071

R^2 = 0.62, Adjusted R^2 = 0.55, F (2, 215) = 202.09, p < .01

Table 4
Regression Analysis Showing Impact of Female Adults' Psychological Needs on their PWB

Predictors	*B*	*Std. Error*	*Beta*	*t*	*p*
(Constant)	4.01	2.00		1.93	.02
Autonomy	.15	.03	.47	2.01	.02
Competence	.13	.05	.44	3.16	.01
Relatedness	.21	.07	.67	4.04	.001

R^2 = 0.54, Adjusted R^2 = 0.42, F (2, 215) = 188.42, p < .01

Table 5
Gender-based Differences in Basic Psychological Needs and Wellbeing

Scales	Males (*N*=218)		Females (*N*=218)			
	M	*SD*	*M*	*SD*	*t*	*p*
Autonomy	47.68	8.42	37.08	9.82	4.25	0.001
Competence	50.14	10.02	43.01	9.13	2.28	0.02
Relatedness	39.87	9.42	45.01	7.91	-2.66	0.03
Wellbeing	231.05	17.00	219.01	15.79	3.72	0.01

df. = 434

DISCUSSION

SDT assumes that nature has well endowed the human organism with tendencies toward health and wellbeing, as well as propensity to seek out the necessary nutrients. Satisfaction of these psychological needs predict PWB, feelings of security, and self motivated behavior. Accordingly, the present study was intended to examine whether the basic psychological needs affect the PWB of people or in other words the study was focused on to explore the relationship of psychological needs and PWB. It was hypothesized that one's psychological needs for autonomy, competence, and relatedness will predict the one's PWB. Results supported the hypothesis and regression analysis (Table 1) indicated clearly that wellbeing depends upon psychological needs. Table 1 showed a significant F value for the multiple regressions (F (2,433) = 101.32, $p < .01$). Results indicated three psychological needs as significant predictors explaining 68% of variance of PWB. The results of beta weights for autonomy ($\beta = .59$; $p< .01$), competence ($\beta = .44$; $p< .05$), and relatedness ($\beta = .66$; $p< .001$) are found significantly related to the dependent variable of PWB. It means that PWB of an individual is regressed upon these psychological needs. These results are consistent with the previous work of Maturana and Varela (1992) that explored the positive role played by psychological needs in predicting wellbeing. They described that the more autonomous an individual's actions, the more the individual function effectively.

The results are also in tune with Self-Determination Theory (Deci & Ryan, 1985, 1991) that suggests when people participate in the activities that leave them with the feelings of autonomy (providing them the strength to make their own decisions and choices), competence (the capacity and skills to perform the acts and behaviors effectively), and relatedness (social belongingness and connectedness with other people) in their physical surroundings, experience more self-determined (or internally controlled) and motivation. In the specific Pakistani cultural context, where we have to be the part of flat world, there is overall deficiencies in the Pakistani individuals to develop skills and competencies that are so critical to survive and to develop in this age of globalization. There is a desire to need to develop these competencies to be the part of highly compatible global world. Development of these skills and satisfaction of basic psychological needs will lead to better PWB that will enable us to convert our human resource into human capital. Higher self-determination and motivation are desirable factors because they are associated with mental

health, more positive life events, and continued aspiration to participate in healthy activities.

These results are also supported by the Self-determination theory (Deci & Ryan, 1985) that provides a theoretical and empirical base for the need to be autonomous in the functioning of lives. This theory suggests that psychological need for attaining autonomy make easier the healthy and adaptive functioning, and development of PWB. Striving for competence a need to successfully afford the challenges also provides the routs to healthy and positive experiences in the life. Intrinsic aspiration increases with the feeling of being competent. A person's functioning in the context of changing environmental demands, make him satisfied because of the pleasure of being effective. In Pakistani culture people usually suffer from state of helplessness, and most of the people are disimpart in their organizational, political, and social context. Since autonomy is linked with the competencies, the development of these competencies in human beings can enable them to impart in the organizational and social context. Having control over their lives will lead them to higher level of PWB, and will increase their performance as well.

Baumeister and Leary (1995) provided the evidence for the significant findings of present study pertaining to the need for relatedness. They reported that the adaptive utility of belongingness, sharing and relatedness facilitate the effective working, healthy interactions, quality of life, and satisfaction with life. Relatedness need ensure a more effective sharing of knowledge in group. Finally, they concluded that benefits of relatedness are open at the one's level of performing effectively, and may also be relevant at the level of one's PWB. Pakistan in its historical roots is a collectivist society but due to political instability and economic crises it has lost its sense of community. There is a dire need to reformulate national objectives to inculcate relatedness and community feelings. As it is an age of team building, the need is to work with team. In result, sense of community would lead to national cohesion and will also improve the level of PWB of Pakistani people.

Knee and Zuckerman (1996) found the role of basic psychological needs in emotional well-being among people. Results indicated that the value of these needs as posited by SDT (Deci & Ryan, 1991) is prominent in dealing with the predicaments of life, self esteem, and PWB of individuals. Since Pakistani could not become the part of the global world therefore most of the individuals are lacking in important competencies and skills required to perform effectively at

their workplace and their social relations. Through the development of these competencies people can have control over their lives and that will lead to better sense of PWB.

Following literature also provided the support for the overall findings of present study. Competence demands to be successful in optimally challenging situations and to get required results (Skinner, 1995); autonomy requires free choice and feeling free and independent in one's behaviors (Deci & Ryan, 1991), and relatedness requires a sense of belongingness, sharing, caring, and connectedness with others (Baumeister & Leary, 1995). Self-determination theory explains these needs as sources that are necessary for one's PWB, development, and moral soundness (Ryan, 1991). This perspective assumes that needs are innate, inborn, and unlearned rather than learned. It suggests that a need for attaining more extrinsic rewards or wishing a basic relationship represents a true need only if its level of satisfaction is associated with directly to level of well-being in individuals. Several studies have provided evidence that is consistent with the postulate that competence, autonomy, and relatedness are in fact true needs related to PWB of people.

Two Way Analysis of Variance (Table 3) for 2 (Gender) × 3 (Psychological Needs) indicates the significant main effects of gender, basic needs, and interaction between gender and psychological needs on wellbeing. This result implies that gender of participants and psychological needs have interactive effects on wellbeing. Table 2 also supports the findings that gender and psychological needs of participants independently affect their wellbeing.

The present study has another objective of knowing the gender differences in relation to psychological needs predicting PWB. It was assumed that men and women' PWB will be predicted by different psychological needs for autonomy, competence, and relatedness. The findings supported the hypothesis and indicated that male adults' needs for autonomy and competence predicted their PWB (Table 3) while female adults PWB was determined by their need of relatedness (Table 4). It also has been evidenced by the analysis of comparison of gender differences that demonstrated that male adults have more needs for autonomy and competence while women have higher need for relatedness. The results further suggested that men are more likely to experience wellbeing as compared to women (Table 5). These findings can be justified by the cultural differences existing in Pakistan. The socialization process in Pakistan expects the men as more autonomous and competent compared to women, while

women are expected more social, related, and helpful for others. Therefore the need for relatedness is more prominent in women, and men try to utilize their abilities to get more autonomy in their environment.

A study conducted by Ryan, Bernstein, and Brown (2010) supported the hypothesis, showing that for both male and female workers, needs for autonomy, relatedness and competence work differently. They further pointed out that these needs are indicators of psychological well-being, and is partially or fully mediated by basic psychological need satisfaction.

Conclusions

Individuals may involve in various types of goal-directed actions in order to satisfy their needs for autonomy, competence, and relatedness because of its value of affecting their wellbeing. The present study concluded that basic psychological needs are positively connected with people's PWB. It was also explored that three types of psychological needs (autonomy, competency, and relatedness) when are satisfying have greater impact on people's effective functioning in their physical environment and can predict PWB. The current study also provided evidence that males and females differ in psychological needs and wellbeing. It was identified that males' PWB is predicted by the satisfaction of their needs for autonomy and competence, and females' PWB is associated more with desire for relatedness. It is recommended that in Pakistan where men and women are expected with varying levels of satisfaction of psychological needs due to their gender role discrimination, they must be provided opportunities to satisfy their needs that could result in development of their PWB.

Limitations & Suggestions

Although the present study provided the important findings that could be helpful in understanding the human behavior, but it also contained some limitations as it has utilized a convenience sampling technique to select the participant, and the sample used in the present study is not large enough that could represent the whole population, Therefore the findings of the present study lack the external validity and can not be generalized. It is recommended that the study should well be replicated in other settings, exploring some more variables which could be associated with psychological needs and wellbeing e.g. education level, age, rural

vs. urban, socio economic classes. Future research needs to explore the aforementioned variables.

REFRENCES

Baumeister, R., & Leary, M. R. (1995). Differentiating Autonomy from Individualism and Independence: The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Journal of Personality and Social Psychology, 117* (3), 497-529.

Bruner, J. (1990). *Competence, Relatedness, and Autonomy in Life Stories*, *Acts of meaning.* Cambridge, MA: Harvard University Press. Retrieved October 29, 2007 from http://www.jstor.org/view/1047840x/ap050044/ 05a00040/0

Deci, E. L., & Ryan, R. M. *(1985).* The general causality orientations scale: Self-determination in personality, *Journal of Research in Personality*. Retrieved February 23, 2008 from http://dipeco.economia.unimib.it/ capabilities/pdf/ryan.pdf

Deci, E. L., & Ryan, R. M. (1985a). *Intrinsic motivation and self determination in human behavior*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (1991). The Meaning of Autonomy: On and Beyond the Interpersonal Circumplex: A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska Symposium on Motivation*. *Perspectives on motivation*. Lincoln: University of Nebraska Press.

Deci, E. L., & Ryan, R. M. (2000). Self-determination theory and work Motivation. The 'what' and 'why' of goal pursuits: human needs and the self-determination of behavior. *Psychological Inquiry*, *11*, 227–268.

Guisinger, S., & Blatt, S.J. (1994). Individuality and relatedness: Evolution of fundamental dialectic. *American Psychologist*. Retrieved September 25, 2007 from http://www.psych.rochester.edu/SDT/measures/caus.html

Hahn, J., & Oishi, S. (2006) Psychological needs and emotional well-being in older and younger Koreans and Americans. *Personality and Individual Differences, 40 (4),* 689-698.

Knee, C. R., & Zuckerman, M. (1996). Differentiating Autonomy from Individualism and Independence: A non defensive personality: Autonomy and control as moderators of defensive coping and self-handicapping. *Journal of Research in Personality, 32*, 115-130

Maturana, H., & Varele, F. (1992). The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior The tree of knowledge: The Biological Roots of Human Understanding. *Boston: Shambla.*

Mc Clelland, D.C., & Burnham, D. H. (1978). Intrinsic need satisfaction: a motivational basis of performance and well-being in two work settings. Power is the great motivator: *Harvard Business Review, 54*, 100-110.

Omodei, M. M., & Wearing, A. J. (1990). Need satisfaction and involvement in personal projects: Toward an integrative model of subjective well-being. *Journal of Personality and Social Psychology, 59*, 762-769.

Reeve J.R (2005). *Psychological needs: Understanding Motivation and Emotion,* John Willey & Sons, Inc., 111River Street, and ISBN 0-471-45619-5.

Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin, 26*, 419-435.

Ryan, R. M., Bernstein, J. H., & Brown, K. W. (2010). Weekends, Work, and Well-Being: Psychological Need Satisfactions and Day of the Week Effects on Mood, Vitality, and Physical Symptoms. *Journal of Social and Clinical Psychology, 29 (1),* 95-122.

Ryan, R. M., Sheldon, K. M., Kasser, T., & Deci, E. L. (1996). Self-determination theory and work Motivation. All goals were not created equal: an organismic perspective on the nature of goals and their regulation. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of*

action: Linking cognition and motivation to behavior. New York: Guilford. pp. 7-26

Ryan, R. M., Kuhl, J., & Deci, E. L. (1997). Differentiating Autonomy from Individualism and Independence: Nature and autonomy: Organizational view of social and neurobiological aspects of self- regulation in behavior and development. *Development and Psychopathology, 9*, 701-728.

Ryan, R. M. (1991) the nature of the self and autonomy and relatedness. In J. Strauss & G.R. Goethals (Eds.), *The self: Interdisciplinary approaches*. New York: Springer Verlag.

Ryan, R. & Deci, E. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist, 55*, 68-78, 70.

Ryff, C., & Keyes, C. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719–727.

Sheldon, K. M., Ryan, R. M., & Reis, H. T. (1996). What makes for a good day? Competence and autonomy in the day and in the person. *Personality and Social Psychology Bulletin, 22*, 1270-1279.

Skinner, E. A. (1995). Intrinsic need satisfaction: a motivational basis of performance and well-being in two work settings. Perceived control, Motivation, and Coping: *Thousand Oaks,* CA: Sage.

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PSYCHOLOGICAL DISTRESS AND COPING STRATEGIES USED BY AMPUTATED SURVIVORS OF OCTOBER 2005 EARTHQUAKE IN PAKISTAN

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ABSTRACT

The present study aimed to examine relationship between psychological distress and coping strategies used by amputated survivors of 8/11 earthquake in 2005 in Pakistan. The present study used cross-sectional correlational design. Thirty earthquake amputated survivors of 8/11 earth quake were recruited through Rehabilitation Centre, Ayub Medical complex, from Mansehra and Balakot survivor camps and it took two months to complete assessments. Urdu version of General Health Questionnaire-12 (Minhas & Mubbashar, 1996) and Coping Strategies Questionnaire (Kausar & Akram, 1998) were used for assessment. Majority(77%) of the participants were experiencing distress. Religious coping strategies were the most and active distractive strategies were the least used coping strategies by the amputated survivors. Moreover, those who used religious focused coping reported less distress and those who used avoidance focused coping strategies reported more psychological distress. The findings highlight the importance of religion and faith in coping with adversities and have important implications for rehabilitation of amputated earthquake survivors.

Key words: Psychological distress, Coping Strategies, Earthquake, Amputated survivors

INTRODUCTION

Stressors experienced by an individual in his/her life may include universal ones such as natural disaster, physical disability and terminal illnesses (Lazarus, 1976). People differ in their adjustment to illness; however various factors have been reported to account for such differences. Coping efforts have been proposed as one of the several factors to account for these differences in adjustment (Horgan & MacLachlan, 1999; Leary & Brown, 1995; McMgrath, 1990; Moos & Schaefer, 1993; Kausar & Akram, 1998).

Amputation resulting from any trauma is a tremendous challenge, it almost affect all aspects of an individual's life. Natural disasters, war, and terrorist attacks can cause traumatic amputations (Ferguson, Richie, & Gomez, 2004; Harriot, 1975; Muilenburg & Wilson, 1996). Traumatic amputation is the accidental severing of some or all of a body part (Harriot, 1975; Susan, 1990). People with amputation frequently go through a grieving period, these feelings are normal but if they persist for a longer period they can affect recovery (Amputation Fact Sheet, 2004; Ferguson, Richie, & Gomez, 2004; Gallagher & MacLachlan, 1999). Amputation not only affects one's limb, it also carries severe psychological problems (Desmond & MacLachlan, 2002; Richie, Ferguson, Adamaly, El-Khoury, & Gomez, 2002) and amputated individuals are reported to experience, anger, depression and guilt (Murphy, Christian, Caplin, & Young, 2006).

Adjustment to an amputation is dependent upon a wide variety of social, psychological, and environmental factors (Murphy, Christian, Caplin, & Young, 2006; Richie, Ferguson, El-Khoury, Adamaly, & Gomez, 2003; Timothy, et al., 2002). During the times of stress, an individual tries to employ skills and abilities to handle stressful situation which may contribute to the people's adaptability and capacity to overcome adversity (Joseph, Andrew, Yule, & Williams, 1992; Klienke, 1991; Pezzin, Dillingham, & MacKenzie, 2004). Coping is broadly conceived as an array of covert behavior patterns by which individual can actively prevent, alleviate, or respond to stressful circumstances (Lazarus & Folkman, 1984; Parkes, 1998; Scafer, 1992). An amputation resulting from a trauma is a sudden occurrence. Amputees handle this stress in different ways and majority is reported to handle it by avoidance i.e. an emotion-focused approach (Hughes, Taylor, Whelen, & Nosek, 2005). Direct, active, problem-focused coping strategies foster successful psychological adaptation to life-threatening chronic illnesses and disabilities (Livneh, Antonak, & Gerhardt, 1999). Religious

coping behaviors and mental health status are strongly associated (Harold & Kenneth, 1998; Zika & Chamberlain, 1992). There is empirical evidence to suggest that positive coping and psychological growth facilitates psychological adjustment (Oaksford, Frude, & Cuddihy, 2005; Pezzin, Dillingham, & MacKenzie, 2004).

Pakistan encountered disastrous earthquake in October 2005. Total area affected was 30,000 km, included a range of unprecedented damage and destruction, such as: Houses, Medical facilities, Telecommunications, Exchanges, Power lines, Schools/colleges, hospitals, and around 100,000 casualties. The survivors had to face multifaceted problems, they lost their loved ones, lost property, lost employment and most of them had lost their limbs (WHO, 2006). The present research aimed to examine: a. psychological distress among amputated survivors of earthquake; b. coping strategies used by them to handle their stress and c: relationship between coping strategies and psychological distress of the amputated survivors.

METHOD

Participants

The sample comprised of thirty survivors of 8/11, 2005 earthquake who had acquired limb amputation during the disastrous earth-quake in Pakistan. They were recruited from earthquake survivor camps in Mansehra and Balakot, the hard hit cities in Frontier province in Pakistan. Those participants were included who could read and write Urdu (Pakistani national language) so that they could complete assessment tools. Survivors who had acquired amputation during quake were included and the ones who reported having amputation prior to the quake were excluded from the sample. Demographic characteristics of the sample are given in table 1.

Majority of the participants were men (70%) with the mean age of 37 years (SD = 16). The sample included survivors with diverse types of amputation i.e. hands, feet, arms and legs and majority had amputated legs.

Table 1
Demographic Characteristics of the Sample (N=30)

Variable	Statistics
Age (in years)	
Range	21-70
M (SD)	37.37(16.11)
Gender	
Male	21(70%)
Female	9(30%)
Education	
Upto middle	11(30%)
Upto matric	13 (40%)
Upto graduation	6 (16.6%)
Marital status	
Married	17(56.7)
Single	10 (33.3)
Widowed	3 (10)
Amputation	
Hand & Foot	8 (26.7%)
Arm	6 (20%)
Leg	9 (30%)
Both Legs	4 (13.3%)
Arm and Leg	3(10.0%)

Assessment Measures

Psychological distress in survivors was assessed using Urdu version of GHQ-12 (Minhas & Mubbashar, 1996). The GHQ-12 assesses depression and unhappiness, anxiety and felt psychological disturbance, social impairment and hypochondriases. Respondents rate themselves on a four-point severity rating scale, according to how they have recently experienced each symptom i.e. better than usual, same as usual, worse than usual, or much worse than usual.

Coping Strategies Questionnaire (CSQ) an indigenously developed by Kausar (Kausar & Akram, 1998) was used for assessment of coping strategies. The questionnaire comprises of 62 statements measuring different types of coping strategies. The respondent is required to indicate on a four point Likert scale (ranging from 1= did not use at all, to 4 = quite a lot) assessing the extent to which a particular strategy that he/she uses. Factor analysis of the CSQ has

resulted in four types of coping strategies i.e. active-practical coping; active distractive coping; religious-focused coping and avoidance coping. These scales had reasonable reliability for the present study (.75, .72, .68, .80 respectively).

Procedure

Participants were recruited through Rehabilitation Centre Abbot Abad, NWFP. The participants were approached after seeking permission from the authorities of disaster management department. Information about amputated survivors was provided by the Rehabilitation Centre and the participants were recruited from the earthquake survivor camps situated in Balakot and Mansehra two major hard hit cities. Informed consent from the participants meeting inclusion criteria was sought. Questionnaires were filled in by the participants in the researcher's presence except for those who had preferred hand amputation whose responses were recorded by the researcher herself. It took about half an hour to complete assessment of an individual participant.

RESULTS

The data was analyzed with SPSS using descriptive and inferential statistics. Psychological distress was ascertained using cut off score criteria (less than 11).

Table 2
Psychological distress in amputated survivors (using cut off score, N=30)

Psychological Distress	***f***	***P***
Normal	2	6.7%
Typical	5	16.7%
Evidence of distress	10	33.3%
Severe distress	13	43.3%

Note: Normal> 11, Typical = 12-14, Distress = 15-19, Severe distress <20

Only 7 % of the amputees fell in the normal range of score on GHQ whereas the rest were experiencing distress of varying degree. Majority of the amputees were experiencing severe level of distress (43.3%).

Since there is a varied number of items in four coping strategies scales, therefore in order to make scores comparable they were converted into standard scores. Descriptive statistics indicated that religious focused coping strategies

were most frequently used strategies whereas active distractive strategies were the least used strategies by the amputated survivors.

Table 3
Coping strategies used by amputated survivors of earth quake (N=30)

Coping strategies	*M*	*SD*
Religious focused coping	9.33	1.23
Avoidance coping	8.14	1.10
Active practical coping	7.91	0.92
Active distractive coping	6.93	0.90

Pearson correlation analysis was used to examine relationship between psychological distress and coping strategies used by the amputated survivors.

Table 4
Relationship between psychological distress and coping strategies (N=30)

	Active practical coping	**Religious focused coping**	**Active distractive coping**	**Active practical coping**
Psychological distress	.10	-.37*	-.20	.50**

**p< .05, **p< .01*

The analysis indicated that there was significant negative relationship between religious coping and psychological distress whereas positive relationship between avoidance focused coping strategies and psychological distress. Those amputees who used religious focused coping strategies reported lower level of psychological distress and those using avoidance focused coping strategies experienced significantly higher psychological distress.

DISCUSSION

The present study explored relationship between psychological distress and coping strategies used by amputated survivors of 8/11, 2005 earthquake in Pakistan. It was found that earthquake and amputation had severe effect on the psychological well-being of the survivors. Majority were experiencing

psychological distress. These findings are in line with previous research conducted with people with physical disability (Hughes, Taylor, Whelen, & Nosek, 2005). Individuals with traumatic limb amputations have been reported to experience symptoms of posttraumatic stress disorder (PTSD) and depression (Cheung, Alvaro & Colotla, 2003). The findings also show consensus with a report by Ministry of Health of Pakistan which states that following the earthquake, the population rates of mental disorders are expected to go up by 5-10%. According to these figures, Pakistan earthquake situation indicates that 120,000-160,000 persons will be needing treatment for mental disorders. Between 600,000 and 800,000 persons are expected to suffer from mild to moderate mental illnesses. One can argue that this trauma was so sudden, unexpected and enormous and no one was prepared to deal with it and it would have caused distress to the survivors. Moreover, in addition to the amputation incurred these survivors had encountered multiple losses i.e. financial loss in form of destruction of houses, loss of employment and significant others. Living in survivors camps with insufficient facilities, witnessing others' miseries could have added to their distress.

The present study examined types of coping strategies used by the amputated survivors to deal with stress of earth quake. Religious focused coping was most frequently used strategy whereas active distractive coping was the least used. At time of extreme stress people turn to God to seek support to cope with stressful situations. Research suggests that people particularly persons with disability; depend on spirituality and religion as an important, if not primary method of coping with physical health problems and life stress (Harold & Kenneth, 1998). If results are interpreted in the cultural context it is found out that people by having their firm belief in the help, and the mercy of Allah (God) they divert towards Allah that He will help them out from this problem. In the wake of adverse situations, an individual tends to turn to God for help and to seek spiritual support. Belief in God and religious faith could have provided sense of security and support to the survivors and thereby could have increased the likelihood of use of religious coping.

In the present study Active practical coping strategies were used less than avoidance coping strategies. It could be for the reason that people did not have enough resources to put practical efforts to handle the enormous stress they faced. They had lost their property, their relatives, and income resources and had also lost their limb. Active -distractive coping strategies were least frequently used by the survivors. This could be for the very nature of the strategies as they

entailed recreational activities such as watching TV, listening music etc. The extent of stress for them was far too severe to warrant use of such strategies. It could also be argued that since they were displaced, living in camps where they did not have TV, radio or provision of any recreational activities therefore use of such strategies was less.

Another important finding of the present study was pertaining to relationship between psychological distress and specific type of coping strategies used by amputated survivors. Positive relationship was found between psychological distress and religious focused coping. There is empirical evidence to suggest that religious coping is related to better mental health (Wachgoltz, Pearce, & Koenig, n.d). At time of stresses those who reappraise God as benevolent, collaborate with God, seek a connection with God, seek support from clergy report less psychological distress (Harold & Kenneth, 1998; Rippentrop, Altmaier, & Burnes, 2006; Zika & Chamberlain, 1992). Another important finding of the present research was that there was a significant positive relationship between avoidance coping strategies and psychological distress. This indicates that those survivors who relied more on avoidance coping were experiencing more psychological distress. An amputation that results from trauma is a sudden occurrence; therefore avoidance as an emotion-focused approach may be aimed at controlling the emotional response to the stressful situation (Gallagher & MacLachlan, 1999). People with amputation may use denial and avoidance coping which could have added to their distress as they would not put practical efforts to handle their stress (Sjodahl, Gard, & Jarnlo, 2004).

The findings from the present study provide a frame work to understand psychological implications of acquired amputation during earthquake and the way survivors cope with it. There are some limitations of the present study and needs to be aware of: a. it was a small scale study with smaller sample size; b. the sample was heterogeneous in terms of type of amputation which does not allow generalization on a particular type of amputation; c. assessment was based on quantitative assessment whereas qualitative account of survivors' distress would have provided in-depth information of distress experienced by the earthquake survivors.

Despite above stated limitations, findings from the present study have demonstrated the presence of psychological distress in survivors and thereby highlight need for provision of psychological services to amputated earthquake

survivors in order to reinstate their psychological well being. The findings also highlight importance of coping strategies, particularly significance of religious coping. The findings do necessitate provision of counseling services for earth quake survivors to enable them cope effectively with their ongoing stresses.

REFERENCES

Amputation Fact Sheet (2004). Retreived, 21st August, 2010 from *http://www. Mossresourcenet. Org/amputa.html.*

Cheung, E., Alvaro, R., & Colotla, V. A. (2003). Psychological distress in workers with traumatic upper or lower limb amputation following industrial injuries. *Rehabilitation Psychology, 48,* 109-112.

Desmond, D., & MacLachlan, M. (2002). Psychosocial issues in the field of prosthetics and orthotics. *Journal of Prosthetics and Orthotics, 14,* 19-22.

Ferguson, D. A., Richie, B. S., & Gomez, M. J. (2004). Psychological factors after traumatic amputation in landmine survivors: The Bridge between physical healing and full recovery. *Disability and Rehabilitation, 26* (14-15), 931-938.

Gallagher, P., & MacLachlan, M. (1999). Psychological adjustment and coping in adults with prosthetic limbs. *Behavioral Medicine, 25,* 117-125.

Harriot, P. (1975). *Essential Psychology: The psychology of handicap.* Great Britain: The Chaucer Press.

Harold, K., & Kenneth, P. (1998). Religious coping and health status in medically ill hospitalized older adults. *Journal of Nervous & Mental Disease, 186,* 513-521.

Horgan, O., & MacLachlan, M. (2004). Psychosocial adjustment to lower-limb amputation. *Disability Rehabilitation, 26,* 837-850.

Hughes, R. B., Taylor, H. B., Whelen, S., & Nosek, M. A. (2005). Perceived stress in women with physical disabilities: identifying psychosocial correlates. *Women's Health Issues, 15,* 14-20.

Joseph, S., Andrew, B., Yule, W., & Williams, R. (1992). Crises support and psychiatric symptomatology in adult survivors of the Jupiter cruise ship disaster. *British Journal of Clinical Psychology, 31*, 63-73.

Kausar, R., & Akram, M. (1998). Cognitive appraisal and coping of patients with terminal versus non-terminal disease. *Journal of Behavioural Sciences, 9*, 13-28.

Kleinke, C. L. (1991). *Coping with life challenges*. California: Brooks &Cole publishing Company.

Lazarus, R. S., & Folkman, S. (1984). Coping and Adaptation. In W. Gentry (Ed.), *Handbook of Behavioural Medicine*. London: Guilford.

Leary, A.O., & Brown, S. (1995). Self efficacy and the psychological stress response. In G. Mason & J. E. Madduk (Eds.), *The plenum series in social clinical Psychology*, pp. 227-245. New York: Plenum Press.

Livneh, H., Antonak, R. F., & Gerhardt, J. (1999). Multidimensional investigation of the structure of coping among people with amputations. *Psychosomatics, 41*, 235-244.

Minah, F. A., & Mubbashar, M. H. (1996). Validation of General Health Questionnaire (GHQ-12) in Primary care settings of Pakistan. *Journal of the College of Physicians and Surgeons, Pakistan, 6*, 133-136.

McMgrath, E. J. (1990). *Social and Physiological factors in stress*. Sydney: Winston.

Moos, R. H., &Schaefer, J. A. (1993). Coping Resources and Processes: Current Concept and Measures. In L. Goldberger & Brenitz (Eds.), *Handbook of Stress: Theoretical and Clinical aspects* (2nd ed.). pp. 234-270. New York: The Free Press.

Muilenburg, L. A., & Wilson, A. B. (1996). *The Amputation. Manual for Above-Knee (Transformal) Amputees*. Retrieved 22, August, 2010, from http://www.oandp.com/resources/patientinfo/manuals/akincex.htm.

Murphy, N. A., Christian, B., Caplin, D. A., & Young, P. C. (2006). The health of caregivers for children with disabilities: caregiver perspectives. *Child: Care, Health and Development, 33* (2), 180-187.

Oaksford, K., Frude, N., & Cuddihy, R. (2005). Positive coping and stress-related psychological growth following lower-limb amputation. *Rehabilitation Psychology, 50,* 266-277.

Parkes, C. M. (1998). Coping with loss. *British Medical Journal, 316,* 1521-1524.

Pezzin, L. E., Dillingham, R. T., & MacKenzie, E. J. (2004). Rehabilitation and the long-term outcomes of persons with trauma-related amputations. *Archives of Physical Medicine and Rehabilitation, 81,* 292-299.

Richie, B. S., Ferguson, A. D., El-Khoury, D., Adamaly, Z., & Gomez, M. J. (2003). Resilience in survivors of traumatic limb loss. *Disability Studies Quarterly, 23, 29-41.*

Rippentrop, E., Altmaier, M., & Burnes, C. P. (2006). The relationship of religiosity and spirituality to quality of life of cancer patients. *Journal of Clinical Psychology in Medical Settings, 13* (1), 29-35.

Scafer, W. (1992). *Stress management for Wellness* (2nd ed.).London: Jones and Bartlett Publishers.

Sjödahl, C., Gard, G., & Jarnlo, G. B. (2004). Coping after trans-femoral amputation due to trauma or tumour: a phenomenological approach. *Disability and Rehabilitation, 26,* 851–861.

Susan, B. S. (1990). *Manual of Emergency Care.* St. Louis: The C. V. Mosby Co.

Timothy, R., Dillingham, M. D., Liliana, E., Pezzin, P., & Mackenzie, H. D. (2002). Limb amputation and limb deficiency: Epidemiology and recent trends in the United States. *Southern Medical Journal, 9* (8), 875-883.

Wachgoltz, A. B., Pearce, M. J., & Koenig, H. Exploring relationship between spirituality, coping, and pain. *Journal of Behavioral Medicine, 30* (4), 311-318. DOI: 10.1007/s 10865-007-9114-7.

World Health Organization (WHO, 2006). *October 2005 earthquake six months of six months of emergency health relief operation Pakistan*. Pakistan Department of Ministry of Health: WHO.

Zika, S., & Chamberlain, K. (1992). On the relation between meaning in life and Psychological well-being. *British Journal of Psychology, 83,* 133-145.