

Perceived Parental Rearing Behaviors, Anxiety, and Intolerance of Uncertainty among University Students

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The present research aimed to explore the relationship between perceived parental rearing behaviors, anxiety, and intolerance of uncertainty among university students. Sample comprised of 301 students (151 males, and 150 females) age range 17 to 25 ($M = 21.73$, $SD = 1.54$) from universities of Rawalpindi/Islamabad. Convenient sampling was employed for data collection. Perceived parental rearing behaviors were measured through short form of Egnä Minnen Beträffande Uppfostron (EMBU; My Memories of Upbringing) scale (Arrindell et al., 1999). For present study this scale was translated into Urdu. Anxiety was measured through Taylor Manifest Anxiety Scale (Ashfaq, 1987) and intolerance of uncertainty was measured through Intolerance of Uncertainty Scale (Rukh, 2013). Pilot Study showed good construct validity of Egnä Minnen Beträffande Uppfostron scale. The Cronbach alpha values of scales were acceptable. Results of Main Study showed that perceived rejecting and over-protective parental behaviors had significantly positive relationship with experiences of anxiety and intolerance of uncertainty. Emotional warmth was negatively correlated with anxiety and intolerance of uncertainty among students. Rejection and Over-protection subscales were positively related to each other. Mediation analysis showed that intolerance of uncertainty partially mediated the relationship between perceived parental rejection and over-protection in anxiety and completely mediated the relationship between perceived parental emotional warmth and anxiety. Findings relevant to intolerance of uncertainty in relation to parenting rearing behaviors will be a guide for future researches.

Keywords: parental behavior, anxiety, uncertainty, rejection, over-protection

Child learns from the environment around him and rearing practices play an important role in the early childhood of every individual. Rearing practices or parenting is the process that fosters and provides support in the emotional, physical, social, and intellectual upbringing of a child. The activity of raising a child into a mature individual is parenting (Davies, 2000) and it is more than just the biological relationship. Parents make their child able to face the challenges of life and to be confident. On contrary, parents may also induce worry and anxiety in their child and making him feel worried and anxious under uncertain situations, by their over-protective and anxious parenting (Greco & Morris, 2002).

As Hildebrand notes right after birth, the child's education starts. Parents and other caregivers, through everyday activities of nurturing, and guiding, help the child learn. The child learns many skills and facts, as well as how to learn. Depending upon the early life experiences, individuals develop their self-concept and self-esteem. Parents and other caregivers can help shape and mould an individual's behavior and self-esteem by showing faith and confidence in the child's abilities, encouraging the child to try new things, understanding when the child fails, comforting the child in time of sadness, and by giving the child affection and love. Through encouragement and praise, parents help the child discover his or her own skills, talents and accomplishments (Hildebrand, 1997; 2007).

Environmental factors, particularly parenting behaviors are thought to play an important role in the development and maintenance of anxiety in children and adolescents. The etiological model of childhood anxiety (Chorpita & Barlow, 1998) suggests that children's sense or lack of control about the environment is mainly influenced by the parental behaviors they experience. Intolerance of uncertainty is also thought to play a vital role in developing anxiety and worry as a result of anxious parental rearing practices (Zlomke & Young, 2009).

According to Brooks (1987), parenting can be defined as a process that provides nourishment, protection, and guidance to the child as the child attains his/her developmental milestones. This definition of parenting proposes that a parent may be a natural parent, surrogate parent, foster parent, aunt, uncle or any significant other related to the child. Parenting is not a simple phenomenon, rather it is a complex activity comprised of many specific behaviors like providing care, support, love, affection, rejection, guidance, control, etc., and all these behaviors work individually and or collectively to structure the individual's personality (Hildebrand, 2007). Individuals utilize such early life experiences to shape their knowledge, values, attitudes, and behaviors that are productive and fruitful to self, family, and society later in their adulthood (Brooks, 1987). Family environment that signifies warm and sensitive parenting is an extremely important aspect in the normal personality development of any individual (McClure, Brennan, Hammen, & Brocque, 2001). Both psychodynamic (Shaffer, 1988) and cognitive behavioral perspective (Adams & Berzonsky, 2007) emphasize the importance of early development.

On the basis of adults' pre-conceptions, parenting styles can differ. Three major parenting styles were distinguished by Baumrind (1991). *Authoritative parents* are those who express warmth and involvement with their children. They offer emotional support, but they also establish firm limits, guidelines, and expectations. Such parents actively listen and are responsive to their children by encouraging them in decision making (Baumrind, 1991).

Authoritarian parents are frequently neither warm nor nurturing. They keep a distance from their children and do not easily consider what their children think or feel. Children of authoritarian parents are at a greater risk of becoming fearful, inhibited, withdrawn, and have increased chances to develop symptoms of depression (Baumrind, 1991). They also have difficulty in making critical decisions of their life as they are used to following instructions. They develop intolerance for uncertain situations and feel anxious and worried under such circumstances (Zlomke, & Young, 2009).

Permissive parents show too lax attitude towards their children. They fail to establish clear behavioral limits, reasonable goals, and overly expect something that is beyond their child's capability. Permissive parents fail to provide a base for the emotional development of their children (Baumrind, 1991).

Different researchers described different dimensions of parenting apart from Baumrind (1991). For Symonds (1939), these facets consist of acceptance or rejection and control or surrender; for Baldwin (1955), emotional affection or lack of sympathy and indifference or attachment; for Schaefer (1959), love or aggression and self-sufficiency or control; for Sears, Maccoby, & Levin (1957), tenderness and restrictiveness or permissiveness.

The presence of some forms of anxious attachment intensifies the impact of later trauma. This is the case for early avoidant and disorganized attachment and later maltreatment (Ogawa, Sroufe, Weinfield, Carlson, & Egeland, 1997). Securely attached children are more socially competent, more likely to have close friends, have more empathy for others, are able to read emotional cues, and are more accepted by their peer group (Waters, Whippman & Sroufe, 1979). The findings imply that children with secure histories were more self-dependent and better problem solvers. Waters et al. (1979) found that secure attachment did not guarantee best possible mental health and social adjustment for each individual, but it was one of the important protective factors for emotional well-being. In the development of resiliency, secure attachment is thought to be one of the important defensive factors (Sroufe, 1997; Steinhauer, 1998).

Anxiety is an emotion that signifies the presence of a danger that cannot be identified, or, if identified, is not sufficiently threatening to justify the intensity of the emotion. Anxiety is an undesirable emotion. It leads to nothing useful because the true source of the distress is unknown (Goodwin, 2004). Anxiety is different from fear. Fear signifies the presence of a known danger. The strength of fear is more or less in proportion to the degree of danger. Many people think that some anxiety is necessary, even good for you. It enhances creativity, builds character, and enlarges awareness of life's possibilities (MacLeod, Williams, & Bekerian, 1991). A state of agitation is aroused within the individual as a result of failure in coping with unusual strains and stress of life. Any conscious or unconscious attempt to appraise, may find its expression in the form of free-floating anxiety. Some individuals succeed in handling this state better than others, channelizing the extra energy in the positive

direction, and show no sign of anxiety. Others may fail to cope with the new and uncertain situation. Worry is a key component to anxiety, and intolerance of uncertainty (IU) is a known factor contributing to worry (Zlomke & Young, 2009). In an effort to identify, prevent, and intervene in problematic worry leading to functional impairment, including diagnosable conditions such as Generalized Anxiety Disorder (GAD; American Psychiatric Association, 2000), research has examined diverse developmental pathways and risk factors for anxiety (e.g., Dadds, 2002; Hudson & Rapee, 2001; Muris & Merckelbach, 1998). The collective evidence from these studies suggests that clinical levels of worry begin to develop within the late adolescent period (Rapee, 1991).

Social learning is thought to have an important role in developing different forms of anxiety (Manassis, Bradley, Goldberg, Hood, & Swinson, 1994; Vasey & Dadds, 2001). Cognitive models propose that the family unit also exhibits a critical part in social learning during the childhood and adolescence (Chorpita & Barlow, 1998). Studies have constantly sustained the relation between different family structures and later experiences of psychopathology (Stark, Humphrey, Crook, & Lewis, 1990).

Intolerance of uncertainty (IU) can be defined as a cognitive bias or individual disposition that influences one's perception, interpretation, and reaction to ambiguous or uncertain situations and is basically the need for security and control of situations and outcomes (Dugas, Gagnon, Ladouceur, & Freeston, 1998). In turn, this IU is presented in individual cognitive, emotional, and behavioral reactions to these phenomenologically uncertain situations, which tend to be negative. Too much anxiety and worry is developed and maintained by the key role of IU that demonstrates an explicit relation with worry (Freeston et al. 1994).

Those people who have high level of IU anticipate that the results of any situation will be unhelpful and hence they are incapable to deal with the situation without being aware of the results (Buhr & Dugas, 2002). Furthermore, increased levels of IU make the situation vague and unclear for the individuals and this induces stress in them as they try to avoid it. When confronting uncertainty, such individuals might not be able to carry on and make effective decisions and adapt a better approach to problem solving (Dugas et al., 1998).

In clarifying the concept of anxiety, the role of IU has gain importance (Holaway, Heimberg, & Coles, 2006). The ability to accept the level of uncertainty varies from person to person and this in turn influences the level of anxiety. Those individuals who cannot tolerate uncertainty under circumstances with aversive results experience high levels of anxiety and continue to face that anxiety (Dugas, Gosselin, & Ladouceur, 2001).

According to Rukh (2013), there was significant negative relationship between IU and mental health. IU was a significant predictor for poor mental health. Several demographic variables were correlated with IU. The sample consisted of women with and without miscarriages. Women with miscarriages had more IU and poor mental health as compared to women without miscarriages, suggesting that experiencing miscarriages leads to IU which affects mental health.

Although much of the researches indicated the relationship between parental anxious rearing behaviors and the development of anxiety and stress among adolescents (e.g., Lindhout et al., 2009; Pereira et al., 2009; Roelofs et al., 2006) not much work has been done on parental anxious rearing practices in relation to anxiety that leads to intolerance of uncertainty. The literature reviewed has provided support for the influence of parental rearing behaviors on childhood, and later adult displays of anxiety and worry. Research in adult and adolescent literature suggests that the construct of IU also plays an important role in the development and maintenance of worry. Although research has examined models in which parenting behaviors influence anxiety through the mediation and/or moderation of perceived control, very few researchers (Zlomke & Young, 2009) have examined whether parenting behaviors are related to IU, or what role (if any) IU plays in mediating the parenting behavior-anxiety relationship.

To understand more fully the ways in which various demographics influences effect parenting practices, which in turn influence the quality of the attachment relationship, is of critical importance to the future well-being of all families. Nevertheless, major gaps are evident in the literature. There is, for example, limited discussion in the literature relevant to this review about the potential influence on attachment of the gender of children, the education and social status/income of parents, and the changing definition of the family (nuclear and joint family systems). Present investigation endeavored to address this gap in the current knowledge of the

development of anxiety by examining the relations between parenting behaviors, IU, and anxiety in a sample of university students (age range 17-26). Hence, the aim of present exploration is to study the relationship between perceived parenting practices, intolerance of uncertainty, and anxiety among university students.

Following study model is being proposed for the present study:

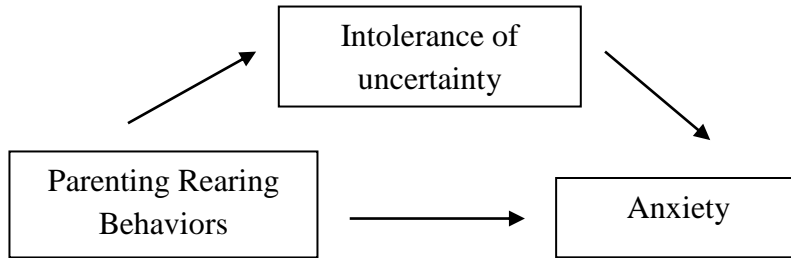


Figure 1. Mediating role of intolerance of uncertainty in parental behaviors and Anxiety

Method

Objectives

The present study was aimed to:

1. Explore the relationship between perceived parental rearing behaviors, anxiety, and intolerance of uncertainty (IU) in university students.
2. Study the predictive predicting role of perceived parental rearing behaviors and IU in university students' levels of anxiety.

Hypotheses

On the basis of previous literature, following hypotheses were formulated:

1. There is a positive relationship between perceived parental rejection, anxiety, and IU experienced.
2. Perceived parental emotional warmth is negatively correlated with experiences of anxiety and IU.
3. The higher the over-protection shown by parents, the higher is the experiences of anxiety and IU.
4. Anxiety and IU are positively correlated with each other.
5. IU acts as a mediator for perceived parental rearing styles in predicting anxiety.

Research Design

Present study was a cross-sectional correlational research that was conducted in two phases. In the first phase, short form of Egnä Minnen Beträffande Uppfostran (Arrindell et al., 1999) was translated into Urdu for the convenience of Pakistani students and then a pilot study was conducted on 50 students to check the reliability of the scales. In the second phase, the main study was conducted on a sample size of 301 students. The data were collected through survey method.

Pilot Study

Pilot study was done to assess the reliability, to pretest the workability of the scales, and to determine the level of understanding of scales for the current sample.

Sample

A sample of 50 students (age range 17-25; $M = 21.56$; $SD = 1.84$) was used to conduct pilot study to check the psychometrics of the instruments and workability of the research design. The data for pilot study was taken from the public and private universities of Rawalpindi and Islamabad through convenient sampling technique. The qualification of sample range from BS to M.Phil level.

Instruments

Demographic sheet: A comprehensive and detailed demographic sheet was devised to explore the role of various important demographic variables e.g. students' gender, parents' education, occupations, family system, type of university, discipline type, etc.

Intolerance of Uncertainty Scale (IUS): This scale was developed in French by Freeston et al. (1994) and translated into English by Buhr and Dugas (2002). It has excellent internal consistency ($\alpha = .94$). Its test-retest reliability for French version is .78, and for English translation it is .74 (Dugas, Freeston, & Landoucheur, 1997). For present study, the Urdu translated version of IUS (Rukh, 2013) was used. The IUS consists of 27 items about uncertainty, emotional, and behavioral reactions to ambiguous situations, implications of being uncertain, and attempts to control the future, and the inability to act. IUS is scored simply by summing up the responses of each item. High scores on IUS represent higher uncertainty. Items are rated on 5 point Likert scale ranging from 1 (*not at all my characteristic*) to 5 (*my characteristic*). The possible score range is 27-135. The reliability of Urdu translated version of IUS (Rukh, 2013) is .88. It has good internal consistency.

Taylor Manifest Anxiety Scale (TMAS): This scale was developed by Taylor (1953). Alpha reliability of the English version of the scale is .77 (Taylor, 1953). The total number of items is 50. Its response format is yes/ no. The normal score range is 14-28. High score (above 28) on this scale reflects high anxiety and low score (below 14) reflects low anxiety. The Urdu translated version of TMAS (Ashfaq, 1987) was used for the present research. The alpha reliability of Urdu translated version is .72 (Ashfaq, 1987).

Short form of Egna Minnen Beträffande Uppfostron (EMBU): This scale was developed by Arrindell et al. (1999). Alpha reliability of EMBU is .72. It is a four point Likert type scale with response categories ranging from 1 (*never*) to 4 (*most of the time*). This scale consists of 23 items with 3 subscales: Rejection (R = 7 items; 1, 4, 7, 13, 15, 16, and 21), Emotional Warmth (EW = 6 items; 2, 6, 12, 14, 19, and 23), and Over-protection (OP = 9 items; 3, 5, 8, 10, 11, 17, 18, 20, and 22). High score on each subscale demonstrated high retrospective parental behavior as perceived by participants.

To use EMBU on Pakistani-student sample, it was culturally adapted and translated into Urdu so that it can be easily understood by the university students. For translation, prior permission was taken from the copy rights agency. For translation, method of forward and back translation (Brisliin, 1976) was employed. The aim of the translation process was to get an Urdu version of EMBU that would be conceptually equivalent in the Pakistani culture. The main focus was on cross-cultural and conceptual translation rather than on word to word translation. The translation was carried out in two phases: Phase I was forward translation; Phase II was back translation.

Phase I: Forward translation. For translating the EMBU scale into Urdu, five bilinguals were approached. Two masters level students of Psychology, one banker, and two professors of English Literature. They translated the scale such that the content similarity was maintained. They were asked to translate each and every item in simple Urdu language without the use of any jargon. After obtaining all the five translations, committee approach was undertaken for critically evaluating the translations and selecting the best out of five. The goal in this step was to identify and resolve the inadequate expressions/concepts of the translation, as well as any discrepancies between the forward translation and the original English version of EMBU. Committee comprised of two faculty members of National Institute of Psychology, Islamabad and the researcher herself. They evaluated all the translations and made changes where necessary. Dictionaries were consulted during translation (Haq, 1981; Platts, 1992). Those translations were selected that conveyed the best meaning in simple, clear, and concise way. After detailed discussion, item no. 6 was culturally modified as the concept of *clubs* is different in the Pakistani context. It was modified by adding *related activities* in item no. 6. For item no. 20, two translations that best conveyed the original meaning were selected for back translation. Emphasis was on the conceptual and contextual meanings of the sentences rather than on word-to-word translation.

Phase II: Back translation. The best Urdu translations were than given to five other bilinguals who were not familiar with the original English version of EMBU. They were asked to translate the Urdu version into English. The purpose of back translation was to cross-check the meanings of original version and the selected Urdu translations. After obtaining all the back translations, a committee meeting was held based on the same members to select the items that were to be included in the Urdu version of EMBU. After thorough discussion and by the use of dictionaries (Haq, 1981; Platts, 1992) the committee found that the original meanings of item no. 5, 7, and 17 were changed. Urdu synonyms were added in these three items, and slight changes were made and then these three items were re-translated. In item no. 14, English synonym (*gestures*) was added and then it was selected for final version. No item was excluded in the Urdu version.

Procedure

After the translation of EMBU scale, data collection for pilot study was under taken. Questionnaires in the form of booklets were distributed to 50 university students of Rawalpindi and Islamabad, after getting informed consent. The importance of the present research was explained to the sample and those who were willing to participate were given questionnaire to fill out honestly. They were instructed to read the questionnaire carefully and mark the options that best described their experiences. They were told that there was no negative marking or evaluation of their responses. The time of administration was 15 minutes maximum. Respondents were acknowledged for their cooperation and participation in the study.

Results

To determine the psychometric properties of the scales for the present research, Cronbach's alpha coefficients for all the three scales were calculated. Table 1 shows the reliability coefficients of all three subscales of EMBU, IUS, and TMAS. As indicated by Table 1, all the three scales seem to be reliable, the value of α ranges from .61 to .90 depicting satisfactory to highly reliable instruments.

Table 1

Alpha Reliability coefficients of EMBU, IUS, and TMAS (N = 50)

Measures	No. of Items	Cronbach α
EMBU		
Rejection	7	.63
Emotional warmth	6	.77
Over-protection	9	.61
IUS	27	.92
TMAS	50	.80

Note. EMBU = The Egena Minnen Betrieffende Uppfostran; IUS = Intolerance of Uncertainty Scale; TMAS = Taylor Manifest Anxiety Scale.

Another important objective of pilot study was to check the internal consistency of translated EMBU.

Table 2

Item-Total Correlation of Subscales of EMBU (N = 50)

Rejection		Emotional Warmth		Over-protection	
Item no.	<i>r</i>	Item no.	<i>r</i>	Item no.	<i>r</i>
1	.62**	2	.73**	3	.50**
4	.42**	6	.67**	5	.43**
7	.48**	12	.73**	8	.62**
13	.67**	14	.81**	10	.67**
15	.75**	19	.50**	11	.54**
16	.35*	23	.72**	17	.44**
21	.64**			18	.36**
				20	.61**
				22	.65**

* $p < .05$. ** $p < .01$.

Table 2 shows the item-total correlation of all the three subscales of translated EMBU. Results indicate that all the 23 items are significantly positively correlated with the total of three respective subscales depicting good internal consistency. The correlation values ranges from .35 to .81.

Sample

Sample comprised of 301 university students; 150 females and 151 males (age range: 17-25; $M = 21.73$; $SD = 1.54$). The data was collected by convenient sampling technique from the public and private universities of Rawalpindi and Islamabad. All these students were from BS level to M.Phil level.

Instruments

Following instruments were used in the main study (For details see Pilot Study):

1. Demographic sheet
2. Intolerance of Uncertainty Scale (IUS)
3. Taylor Manifest Anxiety Scale (TMAS)
4. Urdu translated version of The Egna Minnen Beträffande Uppfostran (EMBU)

Procedure

The procedure followed during Pilot Study was also employed for main study. The researcher directly approached the participants and informed about the purpose of the study. Ethical considerations were kept in mind throughout the procedure. Permission was taken verbally from the chairpersons of the departments. The research material was shown to the administration of the respective universities to address their concerns. The participants were informed about the purpose of the research clearly. Informed consent (i.e. prior permission) was taken in written form from the participants. They were also told the right to leave the questionnaire unfilled at any step if they do not want to participate further till the end. Participants were assured about confidentiality of all their provided information. They were told that the data collected would be used only for research purpose and would not be mis-handled. 350 questionnaires were distributed and 310 were returned. At the end of data collection, all the data was analyzed by Statistical Package for Social Sciences (SPSS-18). Overall the data collection phase was not smooth as a number of difficulties were faced by the researcher. Some students showed non-serious attitude towards the Urdu translated versions of scales because they considered English much comprehensive language than Urdu. As Urdu dictionary (Haq, 1981) was consulted in the translation process, students made fun of dictionary meanings and asked to use common everyday Urdu language in the scales.

Results

In order to examine the descriptive statistics on subscales of EMBU, IUS, and TMAS, mean, median, standard deviations, skewness, and kurtosis are computed.

As indicated by Table 3, all the three scales seem to be reliable, the value of α ranges from .67 (emotional warmth subscale) to .90 (TMAS), depicting satisfactory to high internal consistency of instruments. The negative values of kurtosis indicate the presence of high score in the distribution. The negative values of skewness are representing asymmetrical distribution of data along the mean value. It is representing the presence of lower values and the tail points to the left. The mean values and SD are also represented in Table 3. The values of SD tell that the responses are scattered from the mean of each variable.

Table 3

Alpha Reliability Coefficients and Descriptive Statistics on EMBU, Its Subscales, IUS, and TMAS (N = 301)

Measures	Items	α	M	SD	Media n	Range		Skewne	Kurtosis
						Min	Max.		
EMBU									
R	7	.80	11.83	3.98	11	7	7	.61	-.79
EW	6	.67	17.95	3.17	18	8	8	-.27	-.15
OP	9	.71	22.1	4.8	22	10	10	.26	-.13
IUS	27	.90	77.06	17.25	79	36	36	-.20	-.27
TMAS	50	.76	24.04	6.97	25	7	41	-.30	-.45

Note. EMBU = Egna Minnen Beträffande Uppfostran; R = Rejection; EW = Emotional Warmth; OP = Over-Protection; IUS = Intolerance of Uncertainty Scale; TMAS = Taylor Manifest Anxiety Scale; S.E. of Skewness = .14; S.E. of Kurtosis = .28.

Table 4 indicates that there is a significant positive relationship of rejection with IU and anxiety, so hypothesis 1 is accepted that is: There is a positive relationship between perceived parental rejection, anxiety, and IU. It means that if the parents are more rejecting towards their children, the children would experience more anxiety and more IU. Similarly, Over-protection has significant positive relationships with IU and anxiety. So hypothesis 3 is accepted that is: the higher the over-protection shown by parents, the higher are the experiences of anxiety and IU. Emotional warmth has significant negative relationship with IU and anxiety so hypothesis 2 is also accepted that is: Perceived parental emotional warmth is negatively correlated with experiences of anxiety and IU. It means that higher emotional warmth will lead to lower anxiety and more tolerance for uncertain situations. IU and anxiety have significant positive relation with each other. So hypothesis 4 is also accepted that is: Anxiety and IU are positively correlated with each other.

Table 4 also indicates that there is significant positive relationship between Rejection subscale and Over-protection subscale of EMBU. Also there is significant negative relationship between Emotional warmth subscale and Rejection subscale of EMBU. Also, there is nonsignificant relationship between Emotional warmth and Over-protection subscales. This depicts the concurrent validity of the scale i.e., all the three subscales are measuring the respective dimension of the parenting behavior.

Table 4

Correlations among Perceived Parental Rearing Behaviors, IU, and Anxiety (N = 301)

	1	2	3	4	5
EMBU					
1 Rejection	-	-.31**	.47**	.31**	.42**
2 Emotional Warmth		-	.01	-.16**	-.16**
3 Over-protection			-	.35**	.35**
4 IUS				-	.44**
5 TMAS					-

Note. EMBU = Egena Minnen Betrieffende Uppfostran; IUS = Intolerance of Uncertainty Scale; TMAS = Taylor Manifest Anxiety Scale.

** $p < .01$.

To explore the mediating role of IU in the relationship between perceived parental rearing behaviors and anxiety, mediation analysis by using multiple hierarchical analysis was done.

Table 5 illustrates that perceived rejection predicts anxiety and explains 17% variance in anxiety. This relationship is partially mediated by IU. IU explains 10% additional variance in anxiety. Sobel $t = 4.33$ ($p < .01$) confirms the significant partial mediating role of IU in the relationship between rejection and anxiety. Rejection does not lose its significance completely when IU is entered in Model 2; however the value of β reduced markedly which is evident through significant Sobel test. The prediction is in positive direction.

Table 5 further shows that perceived emotional warmth predicts anxiety and explains 2% variance in contributing to anxiety. This relationship is completely mediated by IU. The mediating effect of IU explains 17% additional variance in anxiety. Sobel $t = 2.63$ ($p < .01$) confirms the significantly complete mediating role of IU in the relationship between emotional warmth and anxiety. Emotional warmth has lost its significance when IU is entered in Model 2; however the value of β is increased which is evident through significant Sobel test. The direction of prediction is negative.

Table 5 also shows that perceived over-protection predicted anxiety and explained 12% variance in anxiety. This relationship was partially mediated by IU. IU explained 11% additional variance in anxiety. Sobel $t = 4.69$ ($p < .01$) confirmed significant partial mediating role of IU in the relationship between over-protection and anxiety. Over-protection does not lose its significance completely when IU is entered in Model 2; however the value of β is reduced markedly which is evident through significant Sobel test. The direction of prediction is positive.

Table 5*IU as Mediator for Perceived Parental Rearing Behaviors Predicting Anxiety (N = 301)*

Predictors	Model 1 β	Model 2 β	S. E.	95% CI	
				LL	UL
Constant	15.29**	6.84**	1.66	3.57	10.1
Rejection	.42**	.31**	.09	.37	.72
IU		.34**	.02	.09	.18
R^2	.17		.28		
F	64.68**		58.9**		
ΔR^2			.10		
ΔF			44.06**		
Constant	30.60**	14.66**	2.85	9.04	20.27
Emotional warmth	-.16**	-.09**	.11	-.44	.01
IU		.42**	.02	.13	.21
R^2	.02		.20		
F	8.50**		38.24**		
ΔR^2			.17		
ΔF			66.12**		
Constant	12.57**	5.50**	1.97	1.62	9.37
Over-protection	.35**	.22**	.079	.17	.48
IU		.36**	.022	.10	.18
R^2	.12		.24		
F	43.77**		47.15**		
ΔR^2			.11		
ΔF			44.20**		

Note. IU = Intolerance of Uncertainty; LL = Lower limit; UL = Upper limit.

** $p < .01$

Discussion

The present study was intended to explore the role of parental anxious rearing behaviors in experiencing intolerance of uncertainty (IU) and anxiety among university students. The study was conducted in two phases. In phase I, for the convenience of Pakistani population, The Egna Minnen Beträffande Uppfostran scale (EMBU) scale was translated into Urdu with the prior permission of the copy right agency. Pilot study ($n = 50$) was conducted to check the psychometrics of the scales and the workability of the study design.

The results of pilot study confirmed the psychometric properties of the scales used (see Table 1). Results specify that EMBU scale was good enough to be used on Pakistani population. The reliability scores of the rejection, emotional warmth, and over-protection subscales are good and satisfactory values but the values of emotional warmth and over-protection are slightly less than those of original English version of the scale that are .79 and .80 (Arrindell et al., 1999). The item-total correlations (see Table 2) were also significant and meant the construct validity of the scale is also good enough. This ensures the construct validity of the scale for the present research (Cronbach & Meehl, 1995). This scale can be easily used on the Pakistani population. There was no negative and nonsignificant values of correlation that means there is no need to exclude any item. The Cronbach's alpha value of IUS came out to be .93 that makes it a highly reliable tool. This value is more or less the same as reported earlier for the original English version that is .94 (Buhr & Dugas, 2002). The Cronbach's alpha of TMAS is .81 that is again a very satisfactory value for a scale to be a reliable one. This value is slightly greater than the previously reported values that are around .75 (Taylor, 1953). In-short all the reliability estimates for the study questionnaires were found to be within acceptable to excellent range (from .67 to .94).

The second phase was the Main Study. First of all, the psychometric properties of the scales were again checked on the larger sample ($N = 301$). Results in Table 3 indicate acceptable alpha values of three subscales of EMBU (for Rejection $\alpha = .80$; for Emotional Warmth $\alpha = .67$; for Over-protection $\alpha = .71$). These values are more or less same as reported earlier (Arrindell et al., 1999). Cronbach's alpha value for IUS was highly reliable ($\alpha =$

.90). This value is consistent with the previously determined value by Buhr, and Dugas (2002). The value of alpha for TMAS was acceptable ($\alpha = .76$). This value is almost similar to one established by Taylor (1953).

Then descriptive statistics of the instruments were assessed for the sample (see Table 3). The values of skewness and kurtosis were negative which means that there is presence of high scores in the data. This might be because of the sensitive nature of anxious parenting behaviors. The maximum values were negative in kurtosis that indicate the flat and light tailed distribution (Field, 2009). To check the normal distribution of the data, value of standard error of skewness and kurtosis were considered. Since the values of skewness and kurtosis were not greater than 1, we can say that extreme values do not exist in the present data. Hence, data on all the measures were normally distributed (Field, 2009).

First hypothesis of our research was: There is a positive relationship between parental rejection, anxiety, and IU experienced. This hypothesis was tested by using Pearson correlation. Results revealed that there was a significant positive relationship between rejection subscale and anxiety (see Table 4). This confirmed our first hypothesis. This finding is consistent with the previous work done on parenting and later experiences in life. Engels, Hale and Meeus (2006) found that adolescents' perception of parental rejection was significantly related to symptoms of anxiety. In another study (Festa & Ginsburg, 2011) same results were found. The results (in Table 4) also indicated a significant positive relationship between rejection and IU. This means that as university students perceive that they faced more parental rejection in their childhood, they become more intolerant to uncertainty in their later life. The work of Young and Zlomke (2009) depicted higher level parental rearing behaviors of rejection with increased reports of IU. There is not extensive literature that studied parental behaviors with IU. Nevertheless, our present findings are consistent to some extent with the work of Buhr and Dugas (2006) who concluded that perceived parental control and rejection is in fact related to IU.

Our second hypothesis was: Perceived parental emotional warmth is negatively correlated with experiences of anxiety and IU. Results were interesting and consistent with the existing body of literature. Significant negative correlation (see Table 4) was found between emotional warmth and anxiety and IU. Engels, Hale, and Meeus (2006) studied the relation of emotional warmth (trust and communication) in relation to symptoms of generalized anxiety and they found that there was negative relationship between both variables. Festen, Hartman, and Hogendoorn (2013) studied parental behaviors in clinical setting in comparison with non-clinical sample. They found that there was significant negative relationship for both mother's and father's emotional warmth with symptoms of anxiety in both their samples. Moreover, Young and Zlomke (2009) also found the same negative relationship between both variables. So, consensus can be built that as emotional warmth on the part of parents increases, symptoms of worry and anxiety in their children decrease.

Hypothesis was also proposed for the over-protection subscale of EMBU: Higher the over-protection shown by parents, higher is the experiences of anxiety and IU. Study findings also confirmed this hypothesis. Correlation results (in Table 4) are confirmed by the existing findings on the same phenomenon. Knappe et al. (2009) studied the role of parental behavior in anxiety during the first 30 years of life. Their findings were relevant to the present study. Their sample (with more anxiety) reported their parents to be more over-protective and with less emotional warmth. This is also the evidence that confirms our third hypothesis.

Another hypothesis was proposed that: IU would play a significant mediating role in the relationship between parenting behaviors and anxiety. To test this hypothesis regression analysis was run. Results showed that IU played a mediating role between perceived parental emotional warmth and later anxiety (see Table 5). Previous research confirmed this finding (Zlomke, 2009). Studies found that IU served as a mediator between anxious rearing and anxiety. Overall, the most important finding of this research was that IU functions as a mediator for the relationship between perceived parenting style or rearing behaviors and symptoms of anxiety. That is, perception of parenting during childhood may influence adult symptoms of anxiety and worry through the development of IU. As noted in the literature, children, adolescents, and adults who described their parents as being rejecting or engaging in anxious parenting behaviors also report increased symptoms of anxiety. More recent research has documented a significant relationship between perceived parental over-protection and IU (Buhr & Dugas 2006).

Implications of the Study

Future studies concerned with the relationship between perceived parental rearing behaviors and anxiety in relation with IU should preferably include nonclinical as well as clinical samples. Findings relevant to clinical point of view will help the clinicians to modify the attachment patterns of individuals in order to deal effectively under uncertain situations. On the basis of study findings relevant to the relationship between perceived parental rearing behaviors, anxiety, and IU different programs can be devised for improved parenting. Findings relevant to IU and anxiety in university students can serve as a base for organizing anxiety management programs. Students can be taught how to take independent decisions in their practical life.

Limitations and Suggestions

1. The sample was taken from the universities of Rawalpindi and Islamabad. So the findings cannot be generalized to the overall population of Pakistan. So, for future researches, it is suggested to take sample from all over Pakistan, so that findings could be generalized.
2. The age range of the sample was 17 to 26 that catered only university students. Future research can be done by increasing the age range to adults or even including children.
3. Students faced confusion in understanding the Urdu response options of Intolerance of Uncertainty Scale. After Pilot Study responses in English were added as *Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree*. For future researches, IUS should be used carefully after addressing the issue related to response categories.
4. The EMBU scale was used as a single form for both parents (mother and father). But it can be used separately for mother and father to check the maternal and paternal rejection, emotional warmth, and over-protective behaviors separately.

Conclusion

Present study builds an insight about the role of parental anxious rearing behaviors in anxiety and IU among university students. Findings revealed were consistent with the proposed hypothesis. There are limited researches done on the relation of these three variables. IU is not studied thoroughly in relation with parenting behaviors. Moreover, it explored the role of different demographics in anxious rearing and later anxiety and IU experiences. So, this research can be a milestone in this area of research as it will fill out potential gaps in the existing literature.

References

- Adams, G. R. & Berzonsky, M. D. (2007). *Blackwell Handbook of Adolescence*. Victoria, Australia: Blackwell Publishing.
- Arrindell, W. A., Sanavio, E., Aguilar, G., Sica, C., Hatzichristou, C., Eisemann, M., et al. (1999). The development of a short form of the EMBU: its appraisal with students in Greece, Guatemala, Hungary and Italy. *Personality and Individual Differences, 27*, 613–628.
- Ashfaq, S. (1987). *Difference in Personality variables and levels of anxiety in female patients with conversion reaction & female patients with other neuroses*. (Unpublished M.Sc Research Report). Islamabad: National Institute of Psychology, Quaid-i-azam University.
- Baldwin, A. L. (1955). *Behavior and Development in Childhood*. New York: Dryden Press.
- Baumrind, D. (1991). The influence of parenting styles on adolescence competence and substance use. *Journal of Early Adolescence, 11*, 56-95.
- Becker, W. C. (1964). Consequences of different kinds of parental discipline. In M. L. Hoffman, & C. W. Hoffman (Eds.). *Review of Child Development Research* (pp. 169-200). New York: Russel Sage.
- Brisliin, W. (1976). Translation: Application and Research: New York: Gardner Press, Inc. Brooks, J. B. (1987). *The process of parenting* (2nd ed.). May field, Pub.co. Retrieved from www.getcited.org/pub/102560032

- Buhr, K., & Dugas, M. J. (2002). The intolerance of uncertainty scale: Psychometric properties of the English version. *Behavior Research and Therapy*, 40, 931-945. Retrieved from: <http://dionysus.psych.wisc.edu/lit/articles/Buhrk2002b.pdf>
- Buhr, K., & Dugas, M. J. (2006). Investigating the construct validity of intolerance of uncertainty and its unique relationship with worry. *Journal of Anxiety Disorders*, 20, 222–236. doi:10.1016/j.janxdis.2004.12.004
- Chorpita, B. F., & Barlow, D. H. (1998). The development of anxiety: The role of control in the early environment. *Psychological Bulletin*, 124, 3 – 21. doi: 0033-2909/98/53.00
- Cronbach, L. J., & Meehl, P. E. (1995). Construct validity in psychological test. *Psychological Bulletin*, 52, 281-302.
- Dadds, M. R. (2002). *Learning and intimacy in families of anxious children*. In R. J. McMahon & R. D. Peters (Eds.), *The effects of parental dysfunction on children* (pp. 87–104). New York: Kluwer Academic/Plenum.
- Davies, M. (2000). *The Blackwell Encyclopedia of Social Work*. Wiley-Blackwell. p. 245. Retrieved from: Error! Hyperlink reference not valid.
- Dugas, M. J., Freeston, M. H., & Ladouceur, R. (1997). Intolerance of uncertainty and problem orientation in worry. *Cognitive Therapy and Research*, 21, 593–606. doi:10.1023/A:1021890322153
- Dugas, M. J., Gagnon, F., Ladouceur, R., & Freeston, M. H. (1998). Generalized anxiety disorder: A preliminary test of a conceptual model. *Behaviour Research and Therapy*, 36, 215–226. doi:10.1016/S0005-7967(97)00070-3
- Dugas, M. J., Gosselin, P., & Ladouceur, R. (2001). Intolerance of uncertainty and worry: Investigating specificity in a nonclinical sample. *Cognitive Therapy and Research*, 25, 551–558. doi:10.1023/A: 1005553414688
- Engels, R., Hale, W., & Meeus, W. (2006). Adolescent's perceptions of parenting behaviours and its relationship to adolescent Generalized Anxiety Disorder symptoms. *Journal of Adolescence*, 29(3), 407-418
- Feeney, B. C., & Van-Vleet, M. (2010). Growing through attachment: The interplay of attachment and exploration in adulthood. *Journal of Social and Personal Relationships*, 27, 226 – 234.
- Festa, C. C., & Ginsburg, G. S. (2011). Parental and peer predictors of social anxiety in youth. *Child Psychiatry Hum Dev*, 42, 291-306. doi: 10.1007/s10578-011-0215-8
- Festan, H., Hartman, C. A., & Hogendoorn, S. (2013). Temperament and parenting predicting anxiety change in cognitive behavioral therapy: The role of mothers, fathers, and children. *Journal of Anxiety Disorders*, 27, 289–297. doi: org/10.1016/j.janxdis.2013.03.001
- Field, A. P. (2009). *Discovering statistics using SPSS*. London, England: SAGE.
- Freeston, M. H., Rheaume, J. E., Letarte, H. L. N., Dugas, M. J., & Ladouceur, R. (1994). Why do people worry? *Personality and Individual Differences*, 17, 791–802. doi:10.1016/0191-8869(94)90048-5
- Goodwin, D. W. (2004). Depression and anxiety associated with three pain conditions: results from a nationally representative sample. *Pain*, 111, 77–83. doi:10.1016/j.pain.2004.06.002
- Greco, L. A., & Morris, T. M. (2002). *Child report on the Parental Bonding Instrument: Perceptions of parental style and child internalizing difficulties*. Manuscript submitted for publication.
- Haq, A. (1981). *The Standard English-Urdu Dictionary*. (3rd ed.). Karachi: Anjuman Karachi Press.
- Hildebrand, V. (2007). *Parenting: Rewards and Responsibilities* (10th ed.). Peoria: Glencoe/ McGraw-Hill.

- Holaway, R. M., Heimberg, R. G., & Coles, M. E. (2006). A comparison of intolerance of uncertainty in analogue obsessive-compulsive disorder and generalized anxiety disorder. *Journal of Anxiety Disorders, 20*, 158–174. Retrieved from: www.sciencedirect.com
- Hudson, J. L., & Rapee, R. M. (2001). Parent-child interactions and the anxiety disorders: An observational analysis. *Behavior Research and Therapy, 39*, 1411–1427. doi:10.1016/S0005-7967(00)00107-8
- Knappe, S., Lieb, R., Beesdo, K., Fehm, L., Low, N. C. P., & Gloster, A. T. (2009). The role of parental psychopathology and family environment for social phobia in the first three decades of life. *Depression and Anxiety, 26*(4), 363–370.
- Lindhout, I. E., Markus, M. T., Hoogendijk, T. H., & Boer, F. (2009). Temperament and parental child-rearing style: unique contributions to clinical anxiety disorders in childhood. *Eur Child Adolesc Psychiatry, 18*, 439–446. doi:10.1007/s00787-009-0753-9
- MacLeod, A. K., Williams, J. M., & Bekerian, D. A. (1991). Worry is reasonable: The role of explanations in pessimism about future personal events. *Journal of Abnormal Psychology, 100*, 478–486. doi:10.1037/0021-843X.100.4.478.
- Manassis, K., Bradley, S., Goldberg, S., Hood, J., & Swinson, R. P. (1994). Attachment in mothers with anxiety disorders and their children. *Journal of the American Academy of Child and Adolescent Psychiatry, 33*, 1106 – 1113. Retrieved from: <http://www.sciencedirect.com/science/article/pii/S0890856709641150>
- McClure, E. B., Brennan, P.A., Hammen C., & Le Brocque, R. M. (2001). Parental Anxiety Disorders, Child Anxiety Disorders, and the Perceived Parent-Child Relationship in an Australian High-Risk Sample. *Journal of Abnormal Child Psychology, 29*(1), 1-10. doi: 10.1023/A:1005260311313
- Muris, P., & Merckelbach, H. (1998). Perceived parental rearing behavior and anxiety disorders symptoms in normal children. *Personality and Individual Differences 25*, 1199–1206. doi:10.1016/S0191-8869(98)00153-6
- Ogawa, J., Sroufe, L. A., Weinfield, N. S., Carlson, E., & Egeland, B. (1997). Development and the fragmented self: A longitudinal study of dissociative symptomatology in a non-clinical sample. *Development and Psychopathology, 9*, 855-1164.
- Pereira, A. I. F., Canavarro, C., Cardoso, M. F., & Mendonc, D. (2009). Patterns of Parental Rearing Styles and Child Behavior Problems among Portuguese School-Aged Children. *Journal of child and family studies, 18*, 454–464. doi:10.1007/s10826-008-9249-3
- Platts, J. T. (1992). *A dictionary of Urdu, and English*. London: Oxford University Press.
- Rapee, R. M. (1991). Generalized anxiety disorder: A review of clinical features and theoretical concepts. *Clinical Psychology Review, 11*, 419–440. doi:10.1016/02727358(91)90116C
- Roelofs, J., Meesters, C., Huurne, M., Bamelis, L., & Muris, P. (2006). On the links between attachment style, parental rearing behaviors, and internalizing and externalizing problems in non-clinical children. *Journal of child and family studies, 15*(3), 331-334. doi: 10.1007/s10826-006-9025-1
- Rukh, S. (2013). *Intolerance of uncertainty and mental health among women with and without the experience of miscarriage*. (Unpublished M.Sc. Research Report). Islamabad: National Institute of Psychology, Quaid-i-Azam University.
- Schaefer, E. S. (1959). A circumplex model for maternal behavior. *Journal of Abnormal and Social Psychology, 59*, 226-235.

- Sears, R. R., Maccoby, E., & Levin, H. (1957). *Patterns of child rearing*. Evanston, IL: Row, Peterson.
- Sroufe, L. A. (1997). Psychopathology as outcome of development. *Development and Psychopathology*, *9*, 251-268.
- Shaffer, D. R. (1988). *Social and personality development* (2nd ed.). Pacific Grove: California. Brooks/Cole Publishing Company.
- Stark, K. D., Humphrey, L. L., Crook, K., & Lewis, K. (1990). Perceived family environments of depressed and anxious children: Child's and maternal figure's perspectives. *Journal of Abnormal Child Psychology*, *18*, 527 – 547. doi:10.1007/BF00911106
- Steinhauer, P. D. (1998). Developing resiliency in children from disadvantaged populations. In Canada Health Action: Building on the Legacy (National Forum on Health), Determinants of Health. *Children and Youth*, *1*, 51-102.
- Symonds, P. M. (1939). *The Psychology of Parent-child Relationship*. New York: Appleton Century-Crafts.
- Taylor, J. A. (1953). A personality scale of manifest anxiety. *The Journal of Abnormal and Social Psychology* *48*(2): 285–290. doi:10.1037/h0056264
- Vasey, M. W., & Dadds, M. R. (2001). An introduction to the developmental psychopathology of anxiety. In M. W. Vasey & M. R. Dadds (Eds.), *The developmental psychopathology of anxiety* (pp. 3 – 26). New York: Oxford University Press. Retrieved from: www.researchgate.net
- Waters, E., Wippman, J., & Sroufe, L. A. (1979). Attachment, positive affect, and competence in the peer group: Two studies in construct validation. *Child Development*, *50*, 821-829.
- Zlomke, K. R. (2009). Psychometric properties of internet administered versions of Penn State Worry Questionnaire (PSWQ) and Depression Anxiety and Stress Scale (DASS). *Computers in Human Behavior*, in press.
- Zlomke, K. R., & Young, J. N. (2009). A retrospective examination of the role of parental anxious rearing behaviors in contributing to intolerance of uncertainty. *Journal of child and family studies*, *18*, 670-679. doi:10.1007/s10826-009-9269-7

Received: Feb, 2nd 2016
Revisions Received: Sep, 19th 2016