

Types of Cognitive Errors and the External Locus of Control in Adolescent Girls

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Abstract

The present study aimed at exploring the types of cognitive errors and their relationship with the locus of control in adolescent girls. A total of 50 participants from Karachi, aged 13 to 15 years, participated in the study. A demographic information questionnaire along with the Urdu Translation of the Nowicki – Strickland Locus of Control Scale for Children (CNSIE) by Nangiana (2002), while a set of four questions to assess the cognitive errors of overgeneralizing, personalizing, selective abstraction and catastrophizing, were administered to all individuals. It was hypothesized that there would be a significant relationship between the levels of locus of control and the cognitive errors made by adolescent girls. The results were tabulated using SPSS Version 16 where a Pearson product-moment correlation coefficient was computed to assess the relationship between the levels of locus of control and cognitive errors. The results show an inverse correlation $r = -.346$, $n = 50$, $p = .014$ indicating a significant relationship between the variables at the 0.05 level. The study has implications for CBT professionals in being culture specific and age specific with respect to the possibility of fewer cognitive errors occurring in conjunction with a higher degree of external locus of control in collectivistic nations like Pakistan while dealing with adolescent girls.

Keywords: locus of control, cognitive errors, adolescent girls, Pakistan.

Adolescence is often described as the age of transition. The young child is at a stage where he is no longer a child and yet is not given the status of an adult. In adolescence, the resolution of the identity crisis is crucial to the smooth and healthy transition to the next psychosocial stage of development (Erikson, 1968).

A review of the literature related to this stage of life suggests that this is a period linked with change, identity crisis (Erikson, 1968), major difficulties (Brown, 1998) and high stress (Savin-Williams & Demo, 1984). In the case of prepubescent adolescents it has been noted that if adequate social support is received in their interactions during this time period, they develop a healthy sense of self and take pride in themselves and their work. The resolution of crises at this time of life largely depends on personal exploration and the encouragement to do so.

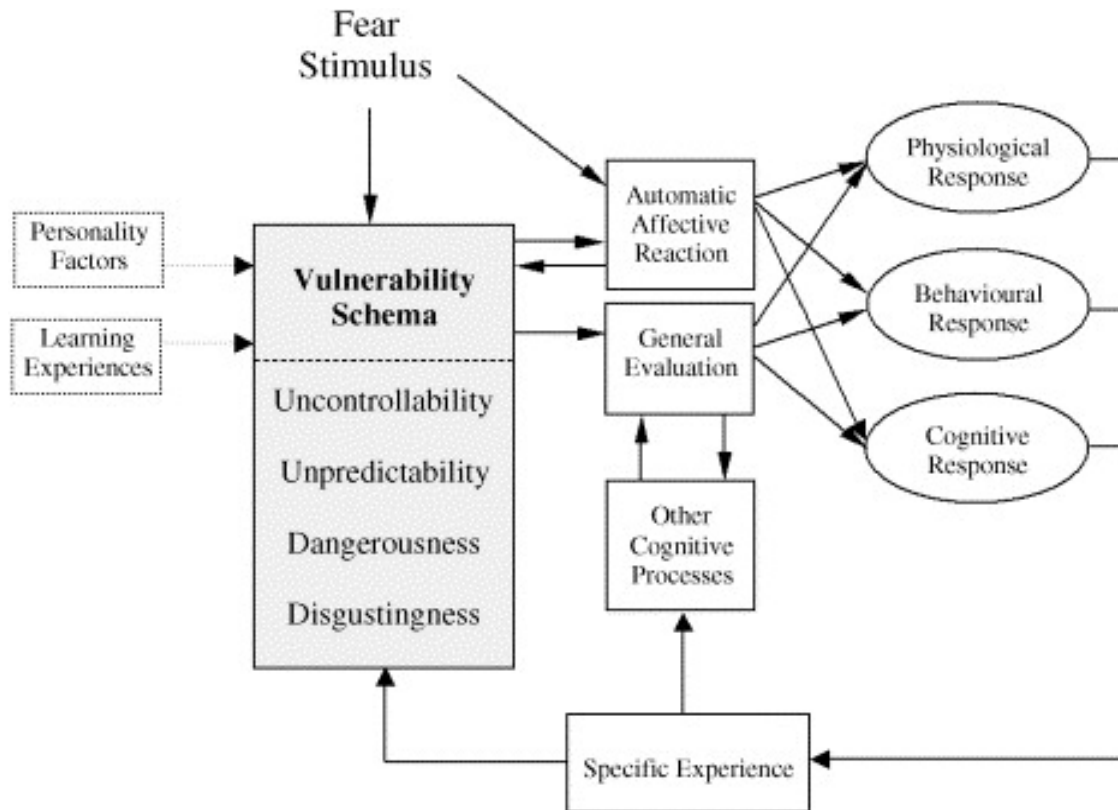
Locus of control is a variable that may exert a powerful influence over an individual by creating cognitive belief systems about the amount and type of control one has over his environment. The levels of internality or externality of control thus become relevant in context to the happiness or unhappiness associated with events (Gursoy & Bicakci, 2007).

The Attribution theory by Weiner (1972) provides a social cognitive perspective about the “*belief that retrospective causal attributions have bearing on present and future motivation and achievement*”. While this theory corresponds to achievement especially in academic settings, it has its role in the understanding of the factors of perseverance and future success. One’s success leads to internal attributions as does the failure of others while the success of others and the failure of one’s own self is attributed externally to situational factors. One view suggests that the lack of control one feels one has over circumstances and events may be responsible for a judgement bias involving a lower estimate of coping ability. This in turn would lead to depression and/or anxiety (Barlow, 2002; Weems, Costa, Watts, Taylor, & Cannon, 2007).

The Cognitive Evaluation theory (Deci, 1975) explains the effects of external consequences on internal motivation. Those with an external locus of control are more likely to lower their goals and increase their expectations when faced with a difficult task and failure.

This is a peculiarity of reactive responses found in negative cognitive errors (Weems, Costa, Watts, Taylor, and Cannon, 2007). The Cognitive Vulnerability Model (Armfield, 2006) shows a chain-link between schema of vulnerability and the general evaluations among other cognitive factors that these evoke. As a result the physiological, behavioural and cognitive states of an individual may be affected which again would lead to an increase in vulnerability. Any circumstances perceived as negative by an individual, when applied to this model take on a similar perspective, evoking the requisite locus of control in view of the level of controllability and leading to and being influenced by the resulting types of cognitive errors.

Fig. 1: Cognitive Vulnerability Model (Armfield, 2006)



Research suggests that there may be a difference in the manner in which males and females utilize attributions. In an unusual twist, females in engineering studies have been found to be more likely than males to link their own success to hard work or external help and their failure to their own lack of ability (Felder, Felder, Mauney, Hamrin, & Dietz, 1995). According to a longitudinal study by Kulas (1996), females show more externality than males during early adolescence and it is later during high school years that the trend may shift towards internality.

A cross cultural comparison of gender specific literature related to locus of control is revealing. While the western paradigm focuses on successful outcomes related to the self with internality, the position in the rest of the world may differ. A stronger tilt in favour of externality has been found in minority groups or those with clear cut ethnic differences – Mexicans, native Americans (Dyal, 1984), Asians and Africans (Riordan, 1981) and Negroes (Battle & Rotter, 1963; Cox, 1993).

Overall, in collectivistic societies such as Turkey and Pakistan, females display a greater level of externality as compared to males (Aricak, 1995; Khan, Nadeem, Saleem & Aslam, 2010). In a study conducted in Turkey, Gursoy and Bicakci, (2007) discovered both self concept and locus of control levels of girls to be negative. Explanations for the correlation stem from parental pressure including more restrictions and the consequential development of feelings of incapability with a sentimental rather than a logical approach towards events.

Considering the explanations given in the literature review above in a cultural context it would be safe to assume that most girls in the early adolescence stage would display a greater degree of external locus of control.

As Pakistan is an Islamic state governed by laws based on Quranic principles, the effect filters down to the cultural percept. Additionally it is a collectivistic and patriarchal society with a tight culture that focuses on the following of rules. The individual identity is absorbed into the mainstream and is ultimately sought through interdependency. For a growing child blossoming into an adolescent, this may be a time period of stress where the external locus of control being stressful, would possibly result in cognitive errors. Therefore, this study attempts to explore the types of cognitive errors and their relationship with the locus of control in adolescent girls. It can be hypothesized that there is a significant relationship between the levels of locus of control and the cognitive errors made by adolescent girls. Additional exploration with regard to particular types of cognitive errors being made can be taken as a factor for further discussion and research.

Method

Sample

The sample of adolescent girls aged between 13-15 years was selected from different educational institutions of Karachi. The income level of the participants' families was between Rs. 5,000 till Rs. 80,000 per month.

Measures

Urdu Translation of The Nowicki – Strickland Locus Of Control Scale For Children (CNSIE):

This 21 item short form of the original 40 item scale, has been translated in Urdu by Sarah J. Nangiana (2002). It has earlier been applied to the students of grade 7 – 12. The scale measures the internal – external attribution style and in its original English form is for 9 – 18 years old youth. It is based on Rotter's (1966) definition of the Locus of Control of reinforcement. The items describe reinforcement situations across areas like affiliation, achievement and dependency. Studies for the original version show adequate internal consistency, test – retest reliability and convergent validity. (Nowicki & Strickland, 1973; Nowicki & Duke, 1983; Nunn, 1989). It has a simple scale with response options for Yes scored as 2 or No scored as 1. A single total score is computed at the end with a range between 21 and 42. The cut off score is 36.5. A high score shows the high perception of internal locus of control whereas a low score describes the external locus of control.

Measurement of cognitive errors

The errors of Catastrophizing, Overgeneralizing, Personalizing and Selective Abstraction were measured using a set of four statements in Urdu – one for each error based on the operational definition for that error. A Likert type scale was applied with the response categories for Extremely True (scored 4), Somewhat True (scored 3), Neither True Nor False (scored 2), Somewhat False (scored 1) and Extremely False (scored 0). A total score is computed at the end with a possible score range between 0 and 16. A higher score is associated with less cognitive errors whereas a lower score is associated with a greater level of cognitive errors. Only item number 2 was reverse scored.

Operational definitions of key terms

The following terms have been operationally defined for the purpose of this study.

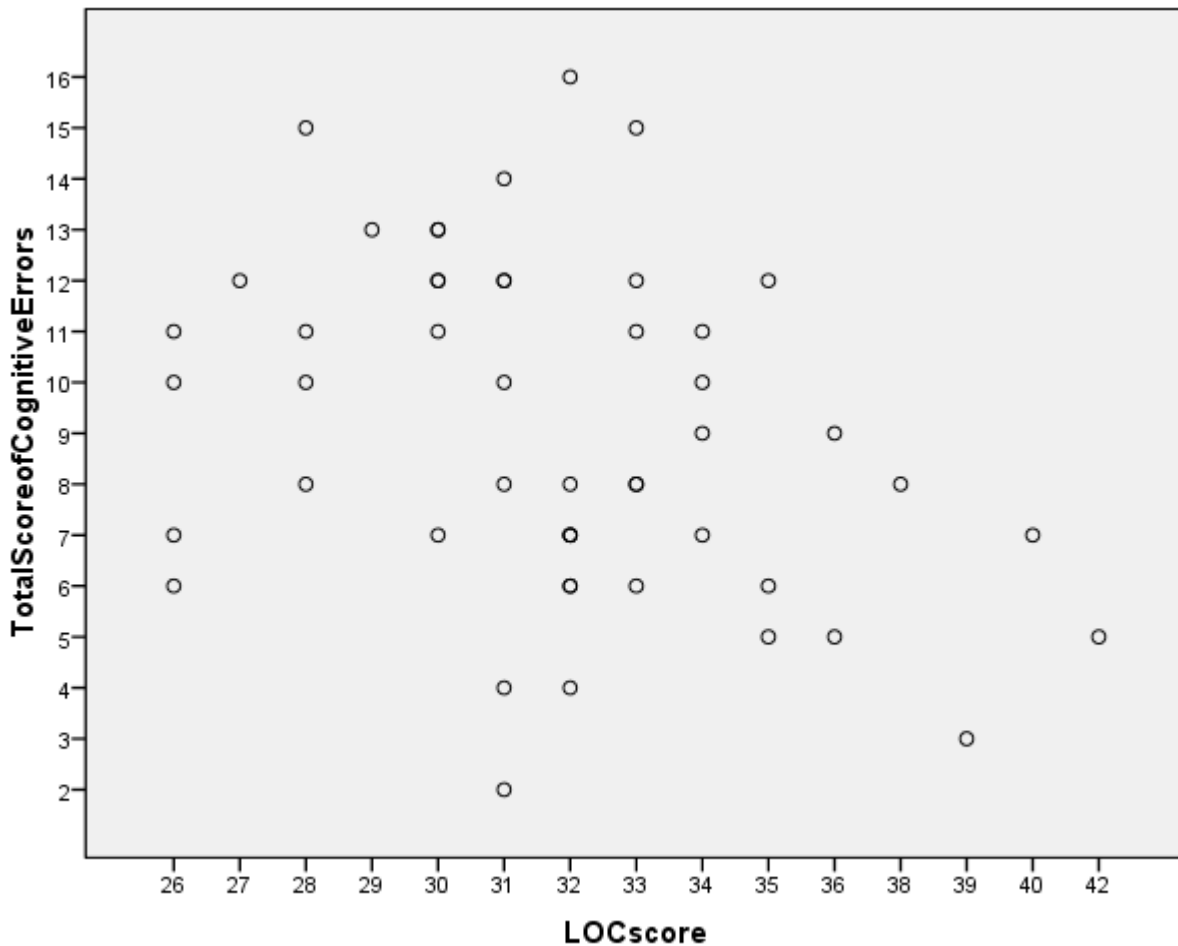
- **Locus of control of reinforcement**
Locus of control of reinforcement is the internal – external control of reinforcement as the perception of a connection between one's action and its consequences. (Nowicki & Strickland, 1973; Rotter, 1966).
- **Cognitive errors**
 - . *Catastrophizing* involves expecting the worst possible outcome of an event or situation,
 - . *Overgeneralizing* involves believing that a single negative outcome is representative of all similar future events,
 - . *Personalizing* involves attributing control over the outcome of negative events to internal causes,
 - . *Selective abstraction* involves selectively focusing on only the negative aspects of an event or situation.
 - . (Weems, Costa, Watts, Taylor, and Cannon, 2007)

Discussion of results

Results were computed for the selected sample of 50 adolescent girls. Only 4 of the girls’ scores were found to be above the cut-off point and consequently internal whereas the rest were all at varying levels of the external locus of control.

Using SPSS Version 16, a Pearson product-moment correlation coefficient was computed to assess the relationship between the levels of locus of control and cognitive errors. The results show an inverse correlation $r = -.346$, $n = 50$, where the p value = .014 indicates a significant relationship between the variables at the 0.05 level.

Fig 2: Scatterplot showing the inverse relationship between the Locus of Control scores and the Total scores obtained for the Cognitive Errors.



Cross tabulation statistics applied through SPSS show a greater degree of the variable of Selective Abstraction followed to an extent by Catastrophizing in the sample population. It should again be noted here that lower scores – 0’s and 1’s denote a greater degree of cognitive error. However, the bar charts are tentative estimates and must therefore be interpreted with caution.

Fig 3: Cross tabulation bar chart showing the scores on Overgeneralization compared with the scores on Locus of Control

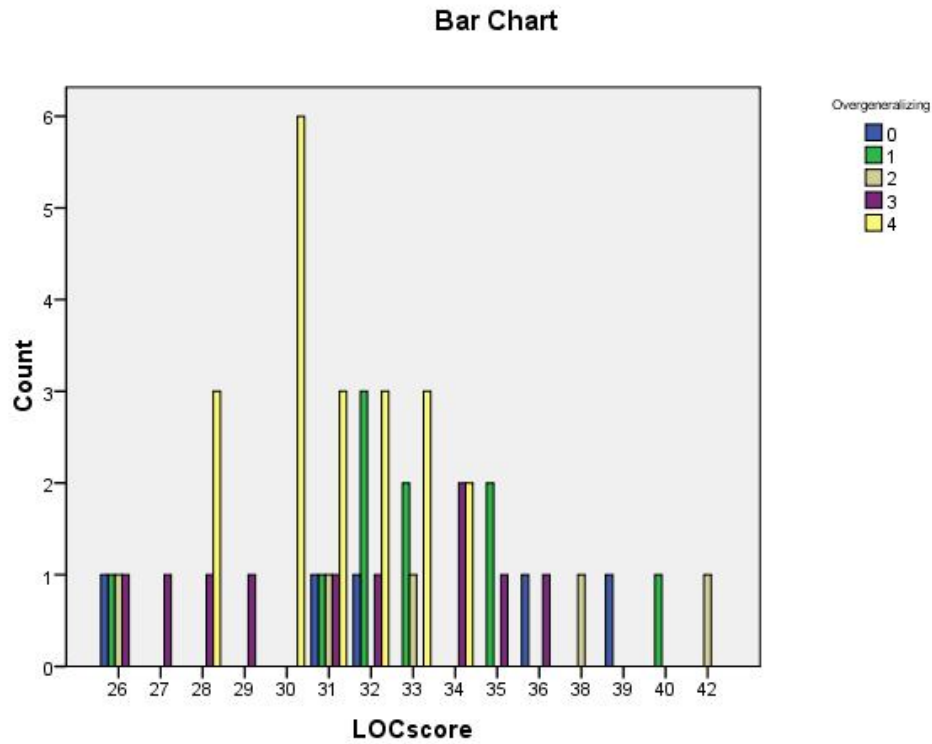


Fig 4: Cross tabulation bar chart showing the scores on Personalization compared with the scores on Locus of Control

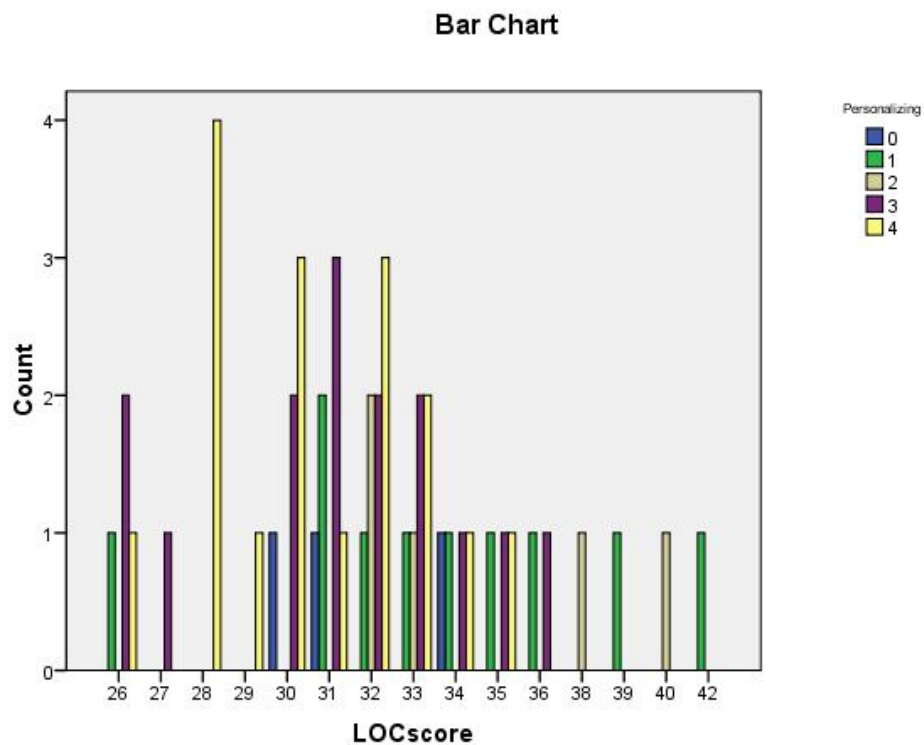


Fig 5: Cross tabulation bar chart showing the scores on Selective Abstraction compared with the scores on Locus of Control

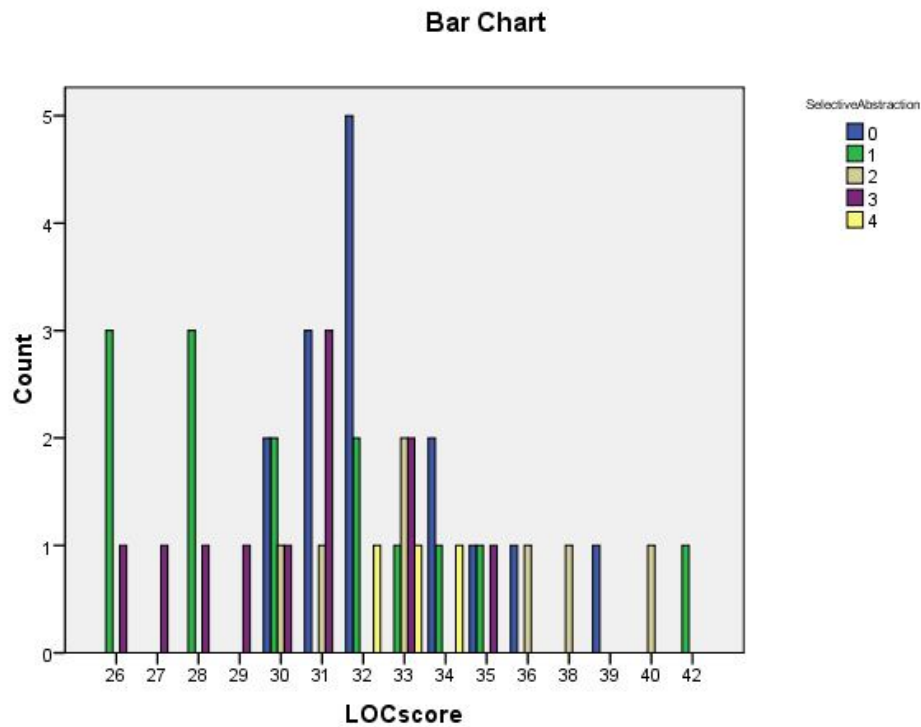
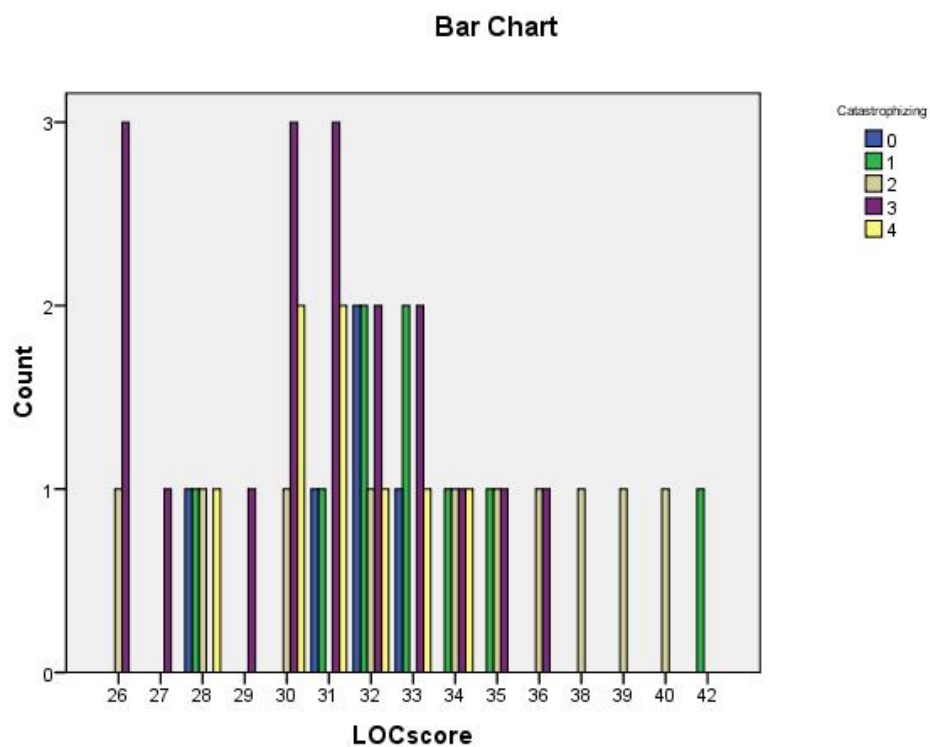


Fig 6: Cross tabulation bar chart showing the scores on Catastrophizing compared with the scores on Locus of Control



The results suggest an inverse relationship between the main variables indicating that the external locus of control in adolescent girls may be one of the potential variables creating a lowered risk for cognitive errors in the sample population for this study. A closer look at the cultural context of this phenomenon shows the possibility of such an outcome.

Externals make for more compliant followers and their role is that of a subordinate. This fits in with the cultural conceptualizations of the role of the girl child in countries like Pakistan while raising a question of causality between the role identity created by society and the level of externality of control. The Pakistani female child is expected to conform to the dictates of a good daughter, sister and wife placing the male in a naturally superior position in the predominantly patriarchal culture. Decisions are made by the head of the family, usually a male and the subordinate role is highlighted during the process resulting in negative consequences heaped on any deviations from this position. Externality then, helps in combating the feelings of lowered self concept as the brunt is placed on circumstances outside one's control. In keeping with Gilligan's (1982) idea of 'the crisis of connection' this scenario results in a different pathway towards identity formation in adolescent girls. Thus their relationships along with the external locus of control remain interconnected with feelings and the emotional states of others fostering a greater level of conformity than boys who may be encouraged to avoid these feelings.

Conclusion

Externality – Internality is seen in a different perspective in conservative societies where patriarchy is the dominant standpoint. In such societies females may adopt externality as a positive and beneficial coping strategy instead of the generally negative connotation it has held in research literature derived from western resources. This study therefore contains implications for CBT professionals in being culture specific and age specific with respect to the possibility of fewer cognitive errors occurring in conjunction with a higher degree of external locus of control in collectivistic nations like Pakistan while dealing with adolescent girls.

Limitations and Recommendations

The smaller sample size can be taken as a factor that diminishes the possibility of generalization. Cross cultural comparisons using the same model can be of interest to the CBT practitioner and researcher in mapping trends and effects. Meanwhile, repetitions in larger samples are necessary so as to explore trends and form suitable conclusions keeping in mind additional controls such as age-wise stratification, socioeconomic variables and school achievement in adolescence.

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