Vol.6 No.3 2023
ISSN Online: 2709-7625
ISSN Print: 2709-7617

COGNITIVE DISTORTIONS IN ADOLESCENTS PRESENTING WITH EXTERNALIZING BEHAVIOURAL PROBLEMS

Dr. Sobia Ishrat
Corresponding Author, PhD Psychology
Assistant Professor Government College for Women Rawalpindi
Email: sobiaexpresses@hotmail.com
Rashida Saidan
PhD Scholar, Fatima Jinnah Women University Rawalpindi
Email: Saidanr6@gmail.com
Husna Bibi
International Islamic University Islamabad
Husnashafiq30@gmail.com
Saira Khalil
International Islamic University Islamabad
sairah.khalil@gmail.com

ABSTRACT

The aim of this research was to assess impact of cognitive distortions, gender and age on presenting complaints of externalizing behavioural problems as assessed through How I Think Questionnaire, and Youth Self Report respectively. A group of adolescents (n = 1258) were initially screened for presentation of problematic behaviours from colleges of Rawalpindi, Islamabad and Attock District of Pakistan. Result Analysis revealed that 17.17% (216/1258) scored high on self-centred;13.83 %(174/1258) on Blaming others subscale; 11.48 % (148/1258) on the "assuming the worst" subscale and 14.1% in the minimizing/ mislabelling subscale in terms of cognitive distortions in adolescents presenting with behavioural problems. Gender difference analysis in terms of cognitive distortions revealed that males had higher mean scores on the HIT (M = 2.64, SD = 0.52) as compared to females (M = 2.41, SD = 0.53), d = .23. Multiple analysis of variance however, indicated that gender, age, and cognitive distortions were significantly predictive of behavioural symptoms.

Key Words: Cognitive Distortions, Externalizing behavioural problems, aggression, depression, anxiety, adolescents.

Vol.6 No.3 2023
ISSN Online: 2709-7625
ISSN Print: 2709-7617

INTRODUCTION

It is central part of adolescent's growth to gain sense of mastery in self-confidence, self-control and attaining an ability to exhibit appropriate social behaviours. As an adolescent enters through educational system and gain more understanding towards social relations, they often experience pressures related to accomplishment of several life goals. In doing so, they must maintain a balance between compliance with the rules as well as gaining individual competency. Industrious school/ college and home environments, and complex social interactions may lead one to develop exemplary self-control over one's attitude and emotional balance, but quite often may also result in inadequate attainment of skills and therefore the adolescents may exhibit range of behavioural or social problems.

It is matter of common observation from the society that many adolescents' behaviour are considered problematic; for example many parents complain that their children reject their values. Similarly underachievement in schools and colleges is another major concern for parents and their families. Research evidence has indicated that more than half of school /college going adolescents are found to be engaged in some form of problem behaviours throughout the world (Koolen, Poorthius & van Aken, 2012). These behaviours may include: absenteeism from schools (Hernandez, 2017), dysfunctional attitudes (Abela & Sketch, 2007) using drugs or self-medication (Krueger, Markon, Patrick, Bennning & Kramer, 2007), depression (Abela, Stolow, Mineka, Zhu & Hankin, 2011), aggression and bullying (Achenbach, McCounaughy, Howell, 1987), shoplifting, stealing and lying (Barriga & Gibbs, 1996) shyness, social anxiety and social phobia (Hinderson, Gilbert & Zimbardo, 2014). A smaller yet significant number of adolescents also report having engaged in risky sexual behaviours (Burn & Brown, 2006). Such behaviours may potentially impart serious consequences for the youngsters, their families, friends, their school/college, and community. Although many such behaviours for example inclination towards sex, trying to gain autonomy and mood swings are normal part of adolescent development but parents consider them abnormal as they are against their expectations. Strong and effective adults are necessary for adolescents; lack of effective and strong adults from the significant others and interlinked environment of the adolescent lead him/her without any model for learning adult healthy behaviours (Erickson & Friedman, 1994).

In Pakistan, 44% of youngsters develop wide range of mental health problems every year (Rehna, 2017). These problems are interlinked with personal and socio cultural system's dynamics and intricacies. Resultantly, when the youngsters do not get proper care from their significant others and interlinked environment, they develop different externalizing behavioural problems.

Cognitive distortions have widely been studied in context of problematic behaviour. For example Achenbeck (1991) has postulated that cognitive distortions of all kinds are commonly found in almost all spectrums of mental health disorders. Another study indicated that negative cognitive style and depression are closely linked with each other in medical students (Rehman, Kazmi & Perveen, 2016). Primary cognitive distortions that originate from egocentric thoughts are often widespread in children and young adolescents which is a stage of pre-conventional and immature moral development (Palmer, 2003; Barriga et al., 2001). Researches have particularly focused on how these cognitive distortions can be maladaptive and could lead to the

Vol.6 No.3 2023
ISSN Online: 2709-7625
ISSN Print: 2709-7617

manifestation of different kind of psychopathologies (Rehna, 2017; Weems et al., 2007, Leung & Poon, 2001, Weems, Berman, Silverman & Saavedra, 2001). For example adolescents suffering from behavioural disorders pay more attention to information where there is aggression. They are more likely to make hostile, violent and aggressive attribution to whatever they heard from others and there may be distrust, irritability and negative attitude towards others. Often they are aggressive both in thinking and behaviour (Donnellan, Trzesniewski, Robins, Moffitt & Caspi, 2005). Cognitive distortions are linked with both internalizing and externalizing behaviour problems. Cognitive distortions is an umbrella term that is used to refer to pseudo-justifications and rationalizations for the deviant and maladaptive behaviours, and leading towards crime or attitudes of an individual that support criminal activities or offensive behaviours (Bruno, 2010). These distortions in the thinking patterns can be "criminogenic" as these can be used by an individual to protect the self from blame by detaching themselves from their maladaptive behaviours by putting the blame on others (Barriga, Landau, Stinson, Liau, & Gibbs, 2000). They can also be used to avoid negative self-concept. These distorted thinking patterns are consequently used to reinforce antisocial behavioural patterns (Barriga, Landau, Stinson, Liau, & Gibbs, 2000).

Once a child or an adolescent is indulged in some sort of misconduct, he or she is more likely to experience psychological distress associated with their feelings of guilt and a negative image about themselves. Thus, the secondary type of thinking errors (blaming others, assuming the worst, and minimizing) start to emerge which is helpful for the adolescent to diffuse the guilt and negative feelings that is burdening him/her. These secondary type of thinking errors are helpful to justify the act of transgression, and reinforce him/her to keep that act continue. Notably, these secondary errors may be pre-transgression as well as post-transgression justifications to knock off the thoughts that produce shame or guilt after committing an offense (Barriga & Gibbs, 1996; Barriga et al., 2000; Gibbs, Potter, & Goldstein, 1995; Liau, Barriga, & Gibbs, 1998; Palmer, 2003). The trajectory of thinking errors depicts that being engaged in any evildoing or aggressive behaviour may lead a person to become embarrassed or regretful of his/her misconduct, which directly distorts his/her belief of being a civilized and good person by nature. This state of conflict raises a sort of cognitive dissonance within the individual that pushes him/her to apply secondary level of cognitive errors to lessen this frustration or discomfort. As these maladaptive patterns of thinking limit or completely erase the feelings of self-blame, therefore they are helpful for the person to guard against the emotional load. More importantly, these maladaptive thinking patterns guards the person against a negative self-interpretation, it, at the same time, also permit rather elevate aggressive behaviour and develop a sense of contentment instead of shame, sorrow, or empathy with the victim (Barriga et al., 2000). Emotional problems are closely linked with self-debasing errors and externalizing behavioural problems are associated with self-serving errors in thinking pattern (Barriga et al., 2000) such as delinquent or sociopathic conducts (Barriga & Gibbs, 1996; Barriga et al., 2000; Plante et al., 2012; Van Leeuwen, Rodgers, Gibbs & Chabrol, 2014).

Koolen et al .(2012) further extended these outcomes and hypothesized that cognitive distortions do not necessarily work in isolation but they also interact with the relatively permanent and enduring personality traits of individuals and jointly explain psychopathology among adolescents. To understand this complex mechanism, the present study further planned to explore the role cognitive distortions in manifestation of externalizing- internalizing behavioural

Vol.6 No.3 2023
ISSN Online: 2709-7625
ISSN Print: 2709-7617

problems. Personality traits are enduring and temperamental characteristics which are biologically determined and remain relatively permanent and stable over time. The last few decades have tremendously further our knowledge regarding personality traits and have been defined from a multidimensional angle i.e. involving cognitive patterns, affective elements and conduct styles (Roberts & Wood, 2006). Scholars have unanimously agreed to three central point's i.e. personality structure (the way particular conduct styles are grouped and organized under umbrella traits), personality development (the way personality characteristics may shape and change in the span of time), and the way personality dimensions impact various important areas of life (Caspi, Roberts, & Shiner, 2005) .

Most of the researches have focused on adult age reflecting personality as more grown up psychological aspect (Caspi, et al., 2005). However, emerging literature has started putting emphasis on personality development in children and adolescents as well. These researches have tried to apply the structure of adult personality to adolescentds theorizing that personality traits of children and adolescents are structured in an orderly manner (Soto & John, 2014; Tackett, Krueger, Iacono, & McGue, 2008; Tackett et al., 2012) similar to that of adults (Soto, John, Gosling, & Potter, 2008; Tackett et al., 2012).

Systematic literature reviews including meta-analysis on prospective studies have identified cognitive distortions as having strong predictive power in terms of explaining prolong course of mental health problems and even suicidality (Sun & Hui, 2007). These studies also suggest that manipulation of the cognitions (as referred in several forms of cognitive behaviour therapies) may reduce behaviour problems considerably and also promote positive thinking and pro social behaviours (Lochman & Wells, 1996).

Keeping in view the significance of cognitive distortions in predicting behavioural problems, current study was carried out on higher secondary school and undergraduate college students across district of Rawalpindi, Islamabad and Attock Pakistan, with following aims and objectives:

1. To identify frequency of cognitive distortions among adolescents
2. To identify gender differences in terms of exhibition of cognitive distortions
3. To identify association between cognitive distortions and externalizing behavioural problems

The two models that have been used to explain the causes behind this faulty thinking process are Beck's (1967) theory of depression and Gibbs' (1993) four-category typology of cognitive distortions. Beck's theory is one of the most influential theories that address the relationship between cognitive distortions and behaviour (Beck, 1976). Gibbs' (1993) four-category typology of cognitive distortions is also important because it specifically addresses adolescent cognitive distortions and is the basis for the How I Think questionnaire (HIT; Barriga, Gibbs, Potter, & Liau, 2001), a measure of adolescent self-serving cognitive distortions used in this study.

Given the findings, we believe that the Teachers are in a unique position to help identify such behaviours among adolescents, seek education about the behaviours, and raise awareness among the adolescents about the risks they face when they engage in these behaviours. Teachers can also play their role in assisting parents to access the resources they need to help their children presenting with problem behaviours.

Vol.6 No.3 2023
ISSN Online: 2709-7625
ISSN Print: 2709-7617

METHOD

Study Sample

The sample consisted of male and female adolescents, between 16 and 22 years of age, studying in grades 11th and 14th in Federal and Punjab Government colleges in Rawalpindi, Sargodha,Lahore, Islamabad and Attock, Pakistan. Purposive sampling technique was used. A total of 1350 adolescents were approached to participate in the study, and ultimately 1258 subjects were finally included after screening for missing information. A total of 19 adolescents refused to participate whereas, and 83 adolescents had incomplete forms. In Phase II of the study, profiles of the participants were identified with high scores on both behavioural problems and cognitive distortions. There were 64.8 % (817/1258) female participants and 35.2% (443) male participants. Education level of the participants was from first year to 4th year (Grade 11-Grade 14). 665 of the participants (52.8%) were of joint family system and 595 (47.2%) were of nuclear family system. Regarding mother language of the participants 53.3 % (671) were Punjabi speaking, 34.9 % (440) Urdu speaking, 7.1 % (90) Pashto speaking, 3.3 % (41) Kashmiri speaking students, 1.3 % (17) Hindko speaking and 1 % (1) Balti speaking students.

Instruments

How I Think Questionnaire

The Urdu version of the How I Think Questionnaire (HIT; Barriga et al. 2001) was used to measure four categories of cognitive distortions (thinking errors). The HIT consists of items that are to be answered on a scale of 1 (I totally agree) to 6 (I totally disagree). A high score on the HIT indicates a high degree of cognitive distortions. The Urdu version of the HIT demonstrated acceptable reliability and validity (Nas et al. 2008). The following cognitive distortions were assessed in the present study: Self-centred (9 items; a = .79), blaming others (10 items; a = .78), Minimizing/Mislabelling (9 items; a = .82), and Assuming the Worst (11 items; a = .80). The same items can also be applied to four behavioural referent subscales: Opposition-Defiance (10 items; a = .80), Physical Aggression (10 item; a = .82), and Lying and Stealing.

Youth Self Report Form

In order to assess problematic behaviours, Youth Self-Report Form (YSR; Achenbach, 1991; Reitz, Deković & Meijer, 2006) was used. There are total 112 items in youth self -report inventory. 14 items of YSR measure social desirability. Youth Self-report form takes only 15 minutes to complete. It is a three point rating scale in which 0 score is given on the responses of ‘‘not true’’, 1 score is given if the statement is ‘‘somewhat or sometimes true’’, and 2 score is given if the statement is ‘‘very true or often true’’ (Reitz et al. 2006). Youth Self Report Form measures two wide-ranging syndromes i.e., internalizing and externalizing behavioural problems. The externalizing behavioural problems comprise of two subscales i.e., Delinquent and Aggressive Behaviour (Reitz, Deković & Meijer, 2006). The internalizing behavioural problems comprise of Depression, Withdrawn, Anxiety and Somatic Complaints. Items reflecting the Anxious/Depressed subscale include statements such as “I cry a lot,” “I am too

Vol.6 No.3 2023
ISSN Online: 2709-7625
ISSN Print: 2709-7617

fearful or anxious." Aggressive Behaviour subscale includes symptoms such as "I am mean to others, problems related to temper, arguing a lot, and attention seeking and screaming". The Delinquent Behaviour subscale includes symptoms such as "use of alcohol, using of substances, lying, stealing, and vandalism". Depression was examined by the "Affective Problems subscale" from the YSR. This DSM oriented subscale was created on the basis of the items that are consistent with the diagnostic categories of Major Depression and Dysthymic Disorder by psychologist around the world who are expert in the field of depression (DSM-IV TR, 2004; DSM V, 2013). The "Affective Problems subscale" includes symptoms such as "screaming, self-harm or suicidal tendencies, crying, considering oneself worthless, sadness and being worried".

According to the manual of Youth Self -Report Inventory The alpha reliability coefficients for Aggressive Behaviour, Delinquent Behaviour, and Affective subscales were reported as ".72, .66 and .82, respectively". According to authors of Youth Self-Report Inventory it was normed on a large and diversified sample of youth belonging to different socio-economic backgrounds (Chabrol, Leeuwen, Rodgers & Gibbs, 2011; Sanchez, Lambert & Cooley-Strickland, 2013). Test–retest reliabilities of Youth Self-report form "range from 0.47 to 0.79"; internal consistencies are in the range of 0.71 to 0.95 (Chabrol, Leeuwen, Rodgers & Gibbs, 2011). According to another study, YSR has good internal consistency in urban youth and across racial/ethnic groups, including Cronbach's alphas ranging from .87 to .95 for internalizing and externalizing scales (Sanchez, Lambert & Cooley-Strickland, 2012).

Procedure

The study was approved by the Institutional Ethical Review Committee, Fatima Jinnah Women University. After ethical clearance, the participants were approached through their educational regulatory authority. All participants voluntarily participated. Informed consent was taken before data collection and confidentiality was insured. All the participants from different public sector colleges who met the inclusion criteria were approached individually for filling the Questionnaires. After data collection, data was checked for normality distribution. Statistical techniques were applied to assess the association between cognitive distortions and externalizing behavioural problems.

RESULTS

1. To identify frequency of cognitive distortions among adolescents

First purpose of the present research was to identify those students that score high on cognitive distortion subscales indicating errors in the thinking process. Criteria used to differentiate those students whose score on cognitive distortions fall in clinical category was based on Barriga, Gibbs and Porter (2001) classification of HIT Summary scores into non-clinical, borderline and clinical categories. All those students who scored above 84th percentile on any subscale of HIT-Q were placed in clinical range. The results of all those scoring greater than 84th percentile and falling in clinical range are described in the form of table I.

If sample have score in the range of 3.03-4.79, it is placed in clinical range on HIT Summary scores (Hernandez, 2017). Keeping in view this criteria, responses of 414 out of 1258 (32.90 %) respondents were in clinical range in HIT Questionnaire total score. Responses of 543 out of 1258 participants on HIT questionnaire were in non-clinical range and responses of 303

Vol.6 No.3 2023
ISSN Online: 2709-7625
ISSN Print: 2709-7617

out of 1258 participants were placed in borderline-clinical. Similarly for overt subscales non-clinical range according to manual of HIT Questionnaire was 2.39-2.73, 686 participants from the present sample of 1258 fell in non-clinical range. Borderline range for overt sub-scale was 2.77-3.05, 314 participants out of 1258 fell in borderline-nonclinical range (Hernandez, 2017). Clinical range for overt subscale according to standardization sample was 3.10-4.74, 260 students from the present sample of 1258 (20.66%) fall in clinical range. For covert subscale 2.31-2.70 non clinical range, 2.74-2.95 borderline clinical range and 3.03- 4.85 clinical range. Therefore 513 participants out of 1258 fell in non-clinical range, sample of 400 out of 1258 fell in borderline-clinical range, while 337 out of 1258 (26.78%) fell in clinical range.

On the subscales of cognitive distortions, 17.17% (216/1258) scored high on self-centred and 13.83 %(174/1258) were falling in the clinical category in Blaming others subscale. Scoring range for placing in the clinical category on Blaming Others subscale was 3.15-5.00. 11.48 % (148/1258) responses were in the clinical category on the "assuming the worst" subscale and 14.1% in the minimizing/ mislabelling subscale of "How I think Questionnaire. 3.00-4.89 was the clinical range for the subscale of minimizing/mislabelling and Clinical range for assuming the worst subscale according to manual of HIT Questionnaire was 3.00-4.92.Similarly responses of adolescents were also assessed for "behavioural referent subscales". 31.79% of adolescents scored high on oppositional defiance subscale of behavioural referent. 67.3% in physical aggression and 60.09 % in stealing. 4% adolescent's responses fall in clinical category in "lying subscale" of HIT Questionnaire.

Behavioural referent subscales are oppositional defiance, lying, stealing and physical aggression. According to Barriga et al(2001) if clients score fall in 2.47-2.90 in oppositional defiance it is placed in non-clinical range, from the present sample by following this criteria 828 out of 1258 sample fell in non-clinical range. 2.95-3.19 borderline-clinical and 3.26-4.60 in clinical range. 32 participants from the present sample of 1258 fell in borderline clinical range in oppositional defiance subscale while the remaining 400 out of 1258 (31.79%) fell in clinical range in oppositional defiance subscale.

For physical aggression if participants score in 2.15-2.75 ranges it is placed in non-clinical range, 610 participants from the present sample of 1258 were placed in non- clinical range, 2.80-3.00 is borderline-clinical range, 183 participants out of 1258 were placed in borderline clinical range. 3.07-4.91 was clinical range. From the present sample 467 out of 1258 (37.12%) were placed in clinical range .For lying subscale 2.59-3.09 is non-clinical range, 3.13-3.38 is borderline clinical range and clinical range is 3.46-5.13. From the present sample 932 out of 1258 sample were placed in non-clinical range, 50 out of 1258 (4%) were placed in clinical range and 316 fell in borderline-clinical range. For stealing 1.91-2.31 is non-clinical range, 2.36-2.56 is borderline-clinical range and 2.61-4.67 is clinical range. 378 participants out of 1258 sample fall in non-clinical range in stealing, 126 participants out of 1260 fell in borderline non-clinical range. 756 participants out of 1258 (60.09%) scored in clinical range.

Vol.6 No.3 2023
ISSN Online: 2709-7625
ISSN Print: 2709-7617

Table 1

Clinical scores of participants on Cognitive Distortion Subscales, Behavioural Referent Subscales and HIT Total Score.

	Clinical	Participant's response (n=1258)
Self –centred	3.20-4.89	57
Blaming others	3.15-5.00	50
Assuming the worst	3.00-4.92	48
Minimizing /mislabelling	3.00-4.89	52
Oppositional defiance	3.26-4.60	400
Physical Aggression	3.07-4.91	467
Lying	2.59-3.09	50
Stealing	2.61-4.67	756
HIT Summary Score	3.03-4.79	414
Overt subscales	2.39-2.73	363
Covert subscales	303- 4.85	337

2. To identify gender differences in terms of exhibition of cognitive distortions

An examination of the mean scores indicated that males had higher mean scores on the HIT (M = 2.64, SD = 0.52) as compared to females (M = 2.41, SD = 0.53), d = .23. This gender difference, in "self-serving cognitive distortions", is consistent with Barriga and colleagues (2001) findings.

Table II

Mean and standard deviations of cognitive distortions subscales and externalizing (N=1258)

Scales	No. of items	Mean	Standard deviation	Range	
				minimum	maximum
YSR					
Externalizing	1258	18.93	7.31	1	47
Delinquents	1258	7.53	3.77	2	56
Aggressive Behaviour	1258	11.18	4.87	0	34
Cognitive Distortion					
Self- centred	1258	25.40	6.46	7	39
Blaming others	1258	27.73	6.78	14	49
Assuming the worst	1258	29.31	7.16	13	55
Minimizing/ mislabelling	1258	25.51	7.90	13	46

Vol.6 No.3 2023
ISSN Online: 2709-7625
ISSN Print: 2709-7617

3. To identify association between cognitive distortions and Externalizing behavioural problems

It was stated that "there will be a positive association between cognitive distortions and externalizing behavioural problems". For that purpose Pearson product moment correlation was obtained using SPSS Software version 22. The result indicated that blaming others had a significantly high correlation with externalizing behavioural problems (.80**, p<.005). Self-centred had also positive relationship with externalizing behavioural problems (.25**, p<.005). Correlation between minimizing/ mislabelling and externalizing behavioural problems was found out to be .22** (p< .005). Overall "cognitive distortion subscales as measured by "How I Think questionnaire" had positive association with externalizing behavioural problems (.56**, p<.05).

Table III

Correlation between externalizing behavioural problems and cognitive distortions (n=1258)

Subscales	Externalizing	Delinquents	Aggress Behaviours	Self-centred	Blaming Others	Assuming worst	Minimizing
Externalizing	-	.795*	.883**	-.048	.80**	-.046	-.014
Delinquent	.795**	-	.416	-.099*	-.128**	.133*	-.062*
Aggressive Behaviour	.883**	.416**	-	.004	-.014	.034	.027
Self –centred	.25**	-.099**	.004	-	.551**	.752*	.596**
Blaming Others	.80**	-.128**	-.014	.551**	-	.701***	.601**
Assuming the worst	.46**	-.133**	.034	.752**	.701**	-	.671**
Minimizing/mislabelling	.222**	-.062*	.027	.596**	.601**	.671**	-

DISCUSSION

This research was carried out to study pattern of self-serving cognitive distortions along with behavioural problems among adolescents in public sector colleges of Rawalpindi, Islamabad and Attock district. As part of the objectives, How I Think Questionnaire (Barriga et al., 2001) was translated and later validated by examining its factor structure and comparing the scores of female and male adolescent's profiles on youth self-report measure of behavioural problems. The mean score for the four domains of cognitive distortions was found to be higher while the respective standard deviations remained lower in this study. Confirmatory factor analyses (CFA) showed that a four-scale cognitive distortion structure was justified for the Urdu

ISSN Online: 2709-7625
ISSN Print: 2709-7617

version of the HIT-Q. Fit indexes were similar to the other versions (Eisenberg, Hernández & Spinrad, 2017). The factor loadings of all items were found to be in satisfactory range.

The cognitive distortion scales correlated significantly with the subscales of youth self-report form. The relationship was in all cases in the expected direction for aggression, delinquency, externalizing behaviour, conduct, obsessive compulsive disorder, attention problems, social problems, anxiety, depression and withdrawn behaviour.

Interestingly, cognitive distortions occurred widely in both male and female adolescents. Both groups showed more cognitive distortions than their peers with a higher level of education. Main hypothesis for the present study was the assumption that students with behavioural problems exhibit tendency towards cognitive distortions that will be significantly different from those students not showing behavioural problems. This study found a significant difference between the students reporting behavioural problems and the students without any behavioural problems. Males in both groups used more self-serving cognitions than females, with males in both groups using more self-centred cognitions than females. Gender differences, group differences, and the main effect, were at a significance of p=. 001 or higher. Mean scores for self-serving cognitions in the behaviour disordered group were significantly higher than the non-behaviour disordered group on all scales of the HIT. This indicates a difference in the cognitive style between the groups. When compared to the past research it becomes apparent that, while the behaviour disordered and non-behaviour disordered groups share some areas of self-serving cognition , the behaviour disordered adolescents were more likely to justify their behaviour with self-serving cognitions then were non behaviour disordered adolescents .

There are many limitations of current research work. It was a cross-sectional study of adolescents or youth' s cognitive distortions, providing evidence of an individual's cognitive distortions at a specific period in time, and based on scenarios or questions designed to measure the individual's cognitive distortions. As such, these distortions were not able to be measured as they actually occurred. Consequently, the participants' responses for the HIT were used to infer what a participant's cognitive distortions would be in cases of actual internalizing and externalizing problems; potentially resulting in the diminished ecological cogency of the present findings. One limitation of the current study is its research design. From the current research design cause and effect cannot be studied. One limitation of current study is data is based on measures of self-report. Collateral information can be obtained in form of institutional records, peers rating, parents and teacher's interviews, port folios or any other anecdotal evidence that can increase or strengthen the findings from self-report measures. There were time and financial constraints. It was not possible to obtain other sources of information beside YSR. The addition of parental or caregiver information (CBCL) regarding the participant and teacher reported form (TRF) may have provided greater validity to the categories by making the categorization criteria more rigorous. Another limitation of the current study is possible existence of confounding variables. Confounding variables may be defined as variables that may act upon the independent and or dependent variable in such a way as to alter the outcome of the study. It is therefore important to identify and, when possible, control confounds. A review of the literature identifies factors such as parenting style, social economic status (SES) race, gender, and environments impacting the behaviour of adolescents.

ISSN Online: 2709-7625
ISSN Print: 2709-7617

Implications

Research is undertaken on the assumption that significant differences exists between the behaviour disordered and non-behaviour disordered adolescents. The validation of this assumption has implications for creating an impact the effectiveness of interventions for behaviour disordered adolescents. Past cognitive behaviour interventions have been based on the premise that self-debasing conditions and low self-esteem play major role in inappropriate behaviours exhibited by behaviour disordered adolescents. This study and others (Barriga , & Gibbs , 1996 ; Liau , et al ., in press & Yochelson , & Somenow , 1976) indicate a parallel set of self-serving conditions may play a substantial role in the behaviour of adolescents with behaviour disorders . New interventions based on modifying these self-serving conditions can be developed to directly address the thinking errors associated with the four specific scales identified in the HIT questionnaire. Additional studies investigating the effectiveness of these interventions compared to traditional cognitive behaviour therapies should provide additional support for the impact of cognitive distortions based on behaviour. The HIT ' s ability to discriminate between the self-serving cognitions of the behaviour disordered and the non-behaviour disordered adolescent could be a valuable tool for the therapist in selecting which intervention is most appropriate for the problem youth.

The HIT may prove to be a useful tool to the therapist with its ability to discriminate between the cognitive patterns found to be present in the behaviour disordered and non-behaviour disordered adolescent. If self-serving cognitions are predominating cognitive style used by the behaviour disordered adolescent then interventions designed to address the self-serving cognition may be initiated. One observation not elaborated on is the fact that even though the behaviour disordered population studies was exposed to a daily routine of strict behaviour modification techniques and traditional counselling they still scored in the clinical range for self-serving cognitions. Current treatment approaches do not seem to be effective. Perhaps it is time to try a new approach in treating behaviour disordered adolescents. The HIT would be an ideal tool to use in designing a more effective treatment approach that targets the self-serving cognitions displayed by this population.

REFERENCES

Abela, J. R. Z., & Skitch, S. A. (2007). Dysfunctional attitudes, self-esteem, and hassles: Cognitive vulnerability to depression in children of affectively ill parents. *Behaviour Research and Therapy,* 45(6), 1127–1140. http://doi.org/10.1016/j.brat.2006.09.011.

Abela, J. R. Z., Stolow, D., Mineka, S., Yao, S., Zhu, X. Z., & Hankin, B. L. (2011). Cognitive vulnerability to depressive symptoms in adolescents in urban and rural Hunan, China: A multiwave longitudinal study. *Journal of Abnormal Psychology,* 120(4), 765–778. http://doi.org/10.1037/a0025295.

Achenbach, T. M, McConaughy, S., & Howell, C. (1987). Child/adolescent behavioural and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin, 101*(2), 213-232.

ISSN Online: 2709-7625
ISSN Print: 2709-7617

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR* (4th ed., text revision). Washington, DC: Author.
American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders*, 5th Edition. Arlington, VA: American Psychiatric Association.
Arbuckle, J.L., & Wothke, W. (1999). *Amos 4.0 user's guide.* Chicago: Small waters.
Barriga, A. Q., & Gibbs, J. C. (1996). Measuring cognitive distortion in antisocial youth: Development and preliminary validation of the "How I Think" questionnaire. *Aggressive Behaviour*, 22, 333–343.
Barriga, A. Q., Morrison, E. M., Liau, A. K., & Gibbs, J. C. (2001). Moral cognition: Explaining the gender difference in antisocial behaviour. *Merrill-Palmer Quarterly, 47*, 532-562.
Barriga, A. Q., Landau, J. R., Stinson, B. L., Liau, A. K., & Gibbs, J. C. (2000). Cognitive distortion and problem behaviours in adolescents. *Criminal justice and behaviour*, *27*(1), 36-56.
Barriga, A. Q., & Gibbs, J. C. (1996). Measuring cognitive distortion in antisocial youth: Development and preliminary validation of the "How I Think" questionnaire. *Aggressive Behaviour*, 22, 333–343.
Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York, NY: International Universities Press.
Bruno, T. (2010). What are they thinking? Cognitive distortions and adolescent externalizing and internalizing problems (Doctoral dissertation). The University of British Columbia, Vancouver, Canada.
Burn, M., & Brown, S. (2006). A review of the cognitive distortions in child sex offenders: An examination of the motivations and mechanisms that underlie the justification for abuse. *Aggression and Violent Behavior*, *11*, 225-236.
Chabrol, H., van Leeuwen, N., Rodgers, R. F., & Gibbs, J. C. (2011). Relations between self-serving cognitive distortions, psychopathic traits, and antisocial behavior in a non-clinical sample of adolescents. *Personality and Individual Differences*, *51*(8), 887-892.Center for Disease Control and Prevention. (2014). *Injury Prevention & Control: Division of Violence Prevention.* Retrieved from http://www.cdc.gov/violenceprevention/acestudy/
Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale: L. Erlbaum Associates.
Donnellan, M. B., Trzesniewski, K. H., Robins, R. W., Moffitt, T. E., & Caspi, A. (2005). Low self-esteem is related to aggression, antisocial behaviour, and delinquency. *Psychological Science*, 16, 328–335. doi:10.1111/j.0956-7976.2005.01535.
Eisenberg, N., Hernández, M. M., & Spinrad, T. L. (2017). The relation of self-regulation to children's externalizing and internalizing problems. *Emotion regulation and psychopathology in children and adolescents*, *18*.
Gibbs, J. C., Potter, G. B., & Goldstein, A. P. (1995). The EQUIP Program: Teaching youth to think and act responsibly through a peer-helping approach. Champaign, IL: Research Press.
Henderson, L., Gilbert, P., & Zimbardo, P. (2014). Shyness, social anxiety, and social phobia. In *Social anxiety* (pp. 95-115). Academic Press.
Ho, M.-Y., Mobini, S., Chiang, T-J., Bradshaw, C. M., & Szabadi, E. (1999). Theory and method in the quantitative analysis of ''impulsive choice'' behaviour: implications for psychopharmacology. *Psychopharmacology*, 146, 362–372.

ISSN Online: 2709-7625
ISSN Print: 2709-7617

Hu, L., & Bentler, P.M. (1999). Cutoff criteria for fi t indices in covariance structure analysis. Conventional criteria versus new alternatives. *Structural Equation Modeling, 6,* 1-55.
Koolen, S., Poorthuis, A., & van Aken, M. (2012). Cognitive distortions and self-regulatory personality traits associated with proactive and reactive aggression in early adolescence. *Therapy and Research, 36,* 776-787.
Krueger, R. F., Markon, K. E., Patrick, C. J., Benning, S. D., & Kramer, M. D. (2007). Linking antisocial behavior, substance use, and personality: an integrative quantitative model of the adult externalizing spectrum. *Journal of abnormal psychology, 116*(4), 645.
Leung, P. W., & Poon, M. W. (2001). Dysfunctional schemas and cognitive distortions in psychopathology: A test of the specificity hypothesis. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, *42*(6), 755-765.
Liau, A. K., Barriga, A. Q., & Gibbs, J. C. (1998). Relations between self-serving cognitive distortions and overt vs. covert antisocial behaviour in adolescents. *Aggressive Behaviour, 24,* 335-346.
Lochman, J. E., & Wells, K. C. (1996). Asocial-cognitive intervention with aggressive children: Prevention effects and contextual implementation issues. In R. D. Peters & R. J. McMahon (Eds.), *Prevention and early intervention: Childhood disorders, substance use and delinquency* (pp. 111-143). Thousand Oaks, CA:Sage.
Nas, C.N., Brugman, D., & Koops, W. (2008). Measuring self-serving cognitive distortions with the How I Think Questionnaire. *European Journal of Psychological Assessment, 24,* 181-189.
Palmer, E. J. (2003). An overview of the relationship between moral reasoning and offending. *Australian Psychologist*, *38*(3), 165-174.
Plante, N., Daigle, M.S., Gaumont, C., Charbonneau, L., Gibbs, J., & Barriga, A. (2012). Validation of the How I Think Questionnaire in a population of French-speaking adolescents with externalizing behaviours. *Behavioural Sciences and the Law, 30,* 196-212.
Rehna, T., Hanif, R., Laila, U. E., & Ali, S. Z. (2016). Life stress and somatic symptoms among adolescents: gender as moderator. JPMA. *The Journal of the Pakistan Medical Association*, 66(11), 1448-1151.
Reitz, E., Deković, M., & Meijer, A. M. (2006). Relations between parenting and externalizing and internalizing problem behaviour in early adolescence: Child behaviour as moderator and predictor. *Journal of adolescence*, *29*(3), 419-436.
Roberts, B. W., & Wood, D. (2006). Personality development in the context of the neo-socioanalytic model of personality. In D. K. Mroczek & T. D. Little (Eds.), *Handbook of personality development* (pp. 11–39). Mahwah, NJ: Erlbaum.
Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.
Sanchez, Y. M., Lambert, S. F., & Cooley-Strickland, M. (2013). Adverse life events, coping and internalizing and externalizing behaviors in urban African American youth. *Journal of Child and Family Studies*, 22(1), 38–47. doi:10.1007/s10826-012-9590-4
Sun, R. C., & Hui, E. K. (2007). Psychosocial factors contributing to adolescent suicidal ideation. *Journal of Youth and Adolescence*, *36*(6), 775-786.
Van Leeuwen, N., Rodgers, R. F., Gibbs, J. C., & Chabrol, H. (2014). Callous-unemotional traits and antisocial behavior among adolescents: The role of self-serving cognitions. *Journal of abnormal child psychology*, *42*(2), 229-237.

ISSN Online: 2709-7625
ISSN Print: 2709-7617

Wallinius, M., Johansson, P., Larden, M., & Dernevik, M. (2011). Self-serving cognitive distortions and antisocial behaviour among adults and adolescents. *Criminal Justice and Behavior*, *38*, 286-301.
Weems, C., Berman, S., Silverman, W., & Saavedra, L. (2001). Cognitive errors in youth with anxiety disorders: The linkages between negative cognitive errors and anxious symptoms. *Cognitive Therapy and Research*, *25*, 559-575.
Yavuzer, Y. (2015). Investigating the Relationship between Self-Handicapping Tendencies, Self-Esteem and Cognitive Distortions. *Educational Sciences: Theory and Practice*, *15*(4), 879-890.
Yochelson, S., & Samenow, S. E. (1977). *The criminal personality*: The change process (Vol. II). New York: Jason Aronson.