Zana Vrucinic[1]
University of Banja Luka
Faculty of Security Studies
Republic of Srpska
Bosnia and Herzegovina

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF PUPILS AS DETERMINANTS OF SELF-SERVING COGNITIVE DISTORTIONS

Abstract

Cognitive distortions are inaccurate or biased ways of interpreting or attributing meaning to experiences. Their role in the development and maintenance of psychopathology associated with internalizing and externalizing behaviors (aggression, delinquency) has proven to be very important. The aim of this study is to determine the differences in self-serving cognitive distortions measured by How I Think Questionnaire (HIT-Q; Barriga, Gibbs, Potter, & Liau, 2001), with regard to the gender, age, place of residence, number of children in the family and family structure, among pupils. The sample in this research was convenient and consisted of 789 pupils, 471 of which were primary school pupils and 318 were secondary school pupils from Republic of Srpska entity. The results show that boys have significantly more pronounced all four self-serving cognitive distortions – self-centered, blaming others, minimizing/mislabelling and assuming the worst as opposed to girls, who achieve lower scores in these dimensions. Older minors (16-19 yrs of age) engage (use) more self-serving cognitive distortions in everyday functioning, unlike younger ones (13-15 yrs of age). Respondents from suburbs, that is, rural areas, achieve higher scores on the dimensions of self-serving cognitive distortion – assuming the worst, in contrast to their peers from the city. Children living in single-parent families score higher on the self-serving cognitive dimension –minimization/mislabeling, unlike their peers who grow up with both parents. Theoretical and practical implications of these findings are discussed.

Keywords: *self-serving cognitive distortion; gender; age; place of residence; number of children in the family; family structure; pupils*

---

1 Correspondence: Zana Vrucinic, PhD – Associate Professor; e-mail: zana.vrucinic@fbn.unibl.org

Introduction

Cognitive distortions are inaccurate or biased ways of attending to or conferring meaning on experiences[2]. Specific types of distortions have been associated with internalizing behaviours (e.g., anxiety, depression, and withdrawal), as well as externalizing behaviours (e.g., aggression, rule-breaking behaviour, hyperactivity[3]. In order to distinguish between the specific cognitive distortions associated with the two problem behaviours, Barriga, Landau, Stinson, Liau, & Gibbs[4] have named those cognitive distortions related to internalizing behaviour as „self-debasing" and those related to externalizing behaviours as "self-serving." In this paper, these two names are used as synonyms.

Self-debasing cognitive distortions can lead to self-harm due to direct or indirect debasing of the self[5]. On the other hand, self-serving cognitive distortions „help to protect the self from blame or a negative self-concept and thereby disinhibit agression or other anti-social behaviour [against others]"[6].

Gibbs, Barriga, Potter[7] designed the "How I Think" (HIT) questionnaire. The conceptual framework of the questionnaire is derived from Gibbs and Potter's (1992) four-category typotogy of self-serving cognitive distortions. Although a number of different types of cognitive distortions have been proposed, this paper has classified cognitive distortion in terms of Gibbs and Potter's work. It is important to note, that the four categories were constructed based on theory, practice, and research[8].

The first type of self-serving cognitive distortion, is referred to as Self-Centred. Self-centred thinking is a primary self-serving cognitive distortion, which involves egocentric bias. A statement which reflects such a self-serving cognitive distortion is, "When I get mad, I don't care who gets hurt"[9]. Such individuals often view any resistance to their wants or wishes as extremely un-

2 Barriga, A. Q., Gibbs, J. C., Potter, G., & Liau, A. K. The How I Think Questionnaire manual. Champaign, IL: Research Press. 2001. p. 1.

3 Barriga, A. Q., Landau, J. R., Stinson, B. L., Liau, A. K., & Gibbs, J. C. Cognitive distortion and problem behaviours in adolescents. Criminal justice and behaviour, 27(1), 2000. p. 36–56.

4 *Ibidem*, p. 40

5 Liau, A. K., Barriga, A. Q., & Gibbs, J. C. Relations between selfserving cognitive distortions and overt vs. covert antisocial behaviour in adolescents. *Aggressive Behaviour,* 24, 1998. p. 335–346.

6 Barriga, Landau, Stinson, Liau, & Gibbs, *op. cit.* p. 36

7 Gibbs, J. C, Barriga, A. Q., & Potter, G. The "How I Think" questionnaire. Unpublished manuscript, The Ohio State University, Columbus, OH. 1996.

8 *Ibidem*

9 Gibbs, Barriga, & Potter, *op. cit.*, p. 3

fair. While the overt aggressive behaviour linked to such a primary self-serving cognitive distortion can often be constrained by guilt based on empathy or threats to self-concept, the presence of secondary self-serving cognitive distortions can reduce or remove these inhibitions. The primary type of cognitive distortions is reinforced by secondary type of cognitive distortions[10], which are referred as rationalizations that can happen before or after the offence and are hypothesized to "neutralize" guilt or feeling bad about behaviour. It helps to prevent damage to self-esteem of the individual. Thus, secondary self-serving cognitive distortions play a significant role in the continuation of antisocial and aggressive behaviours as they counteract any sense of remorse or conscience[11]. The three types of secondary self-serving cognitive distortrons are; Assuming the Worst, Blaming Others, and Minimizing/Mislabeling. Assuming the Worst refers to the attribution of hostile intentions to others. A statement such as, "If you don't push people around, you will always get picked on" is a good example of this type of self-serving cognitive distortion[12].

Blaming Others is a self-serving cognitive distortion which often follows the distortion of Assuming the Worst. Blaming Others is a form of misattribution in which the blame is externalized to others. Blaming Others is a powerful type of distortion, which often twists reality and thus, removes any feelings of empathy-based guilt or conflict to self-concept. A statement such as, "I lose my temper because people try to make me mad" is an example of this form of self-serving cognitive distortion[13]. The third type of secondary self-serving cognitive distortion occurs when an individual perceives his/her antisocial or aggressive behaviour as acceptable. It is known as Minimizing/Mislabeling. This type of distortion is evident in the statement, "People need to be roughed up once in a while"[14]. In this research the HIT was used to measure self-serving cognitive distortions. Item examples of the four subscales can be seen in Table1.

Using the HIT, Gibbs and his colleagues investigated the relationship between self-serving cognitive distortions and antisocial behaviour. Studies conducted by Barriga and Gibbs (1996) and Liau, Barriga, & Gibbs (1998) both

10 Barriga, A. Q., & Gibbs, J. C. Measuring cognitive distortion in antisocial youth: Development and preliminary validation of the "How I Think" questionnaire. *Aggressive Behaviour,* 22, 1996. p. 334.

11 Gibbs, J. C, Potter, G. B., Barriga, A. Q., & Liau, A. K, (1996). Developing the helping skills and prosocial motivation of aggressive adolescents in peer group. *Aggression and Violent Behavior*, Vol. 1, No. 3, pp. 283–305.

12 Gibbs, Barriga, Potter, *op. cit.* p. 4

13 *Ibidem*, p. 7

14 *Ibidem*, p. 2

supported the notion that self-serving cognitive distortions are associated with antisocial behaviour, that is, to play an important role in their development and maintenance.

Cognitive distortions are thought to play an important part in understanding the symptomology, interventions and treatment of externalizing behavior problems in the arena of correctional psychology and criminology[15]. In literature, the term cognitive distortions are referred to as general umbrella term to mention to falsely justifying and validations of deviant, antisocial behavior of adolescents and also attitudes that lead towards crime or support their offensive behaviours[16]. Cognitive distortions are thought to have significant part in the manifestation of criminal behaviour as they may help protect an individual from self- blame, strengthen their antisocial behaviour and avoid negative evaluation of their self-concept. Various research evidence has shown that level of cognitive distortions is very high in criminals as compared to those who are not involved in any crime[17].

There is category of "Anxiety disorders" mentioned in Diagnostic and statistical manual of mental disorders (DSM 5) of American Psychiatric Association[18] under the umbrella term of „impulse control disorders". They include many disorders faced by impulsive individuals. These are kleptomania, pathological gambling, intermittent explosive disorder[19], trichotillomania (hair-pulling disorder) and pyromania. Cognitive distortions play a vital part in the exhibiting of impulsive behaviours and other externalizing behavioural problems. "For understanding impulse related disorders and to provide effective intervention it is deemed necessary to understand the association between cognitive distortions and impulsive behaviours. Having knowledge about different kinds of cognitive distortions can help us in „identifying themes" to be looked for while providing therapy for impulse related behavioural disorders[20].

---

15 Barriga, Landau, Stinson, Liau, & Gibbs, *op. cit.*

16 Helmond, P., Overbeek, G., Brugman, D., & Gibbs, J. C. (2015). A metaanalysis on cognitive distortions and externalizing problem behaviour: Associations, moderators, and treatment effectiveness. *Criminal Justice and Behaviour*, 42(3), 245‑ 262.; Barriga, Landau, Stinson, Liau, & Gibbs, *op. cit.*

17 *Ibidem*

18 American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: Author. P. 461

19 Behavior characterized by poor emotional control, outbursts of anger that are disproportionate to interpersonal or other provocations or other psychosocial stressors

20 Mobini, S., Pearce, M., Grant, A., Mills, J., & Yeomans, M. R. The relationship between cognitive distortions, impulsivity, and sensation seeking in a nonclinical population sample. *Personality and Individual Differences*, 40(6), 2006. p. 1155

The literature review indicates that various researches has been aimed to assess the association between distorted thinking and internalizing and externalizing problems in youths[21]. Although some research reports the positive association between cognitive distortions and internalizing externalizing behavioural problems, substantial gaps still exist in the literature. To our knowledge, research related to cognitive distortions as measured by HIT-Q were conducted on a sample of adults[22], incarcerated youth[23], clinic sample[24], respectively on male respondents[25]. However, most of the studies, on different populations, have been conducted in Europe and America.

There are much rarer studies on a sample of primary and secondary school students. Youth are the backbone of the nation and focus on students will help to increase the generalizability of current research work as it will help to eliminate potential referral bias that is present when clinical population or in prison participants are used. There is no study investigating the differences in self-serving cognitive distortions with regard to the certain sociodemographic characteristics on a sample of the school population. In this regard, the aim of this research is to examine the existence of possible differences in the expression of cognitive distortions with regard to sociodemographic characteristics (gender, age, place of residence, number of children in the family and family structure) on a sample of primary and secondary school students.

The current study makes a unique contribution, adding to the literature a research that uses a significantly larger sample (n=789) of students by including both males and females, and without the potentially confounding inclusion of incarcerated youth in the analyses[26]. This research has relied on a

21 Bruno, T. What are they thinking? Cognitive distortions and adolescent externalizing and internalizing problems (Doctoral dissertation). The University of British Columbia, Vancouver, Canada. 2010; Frey, E. D., & Epkins, C. C. Examining cognitive models of externalizing and internalizing problems in subgroups of juvenile delinquents. *Journal of Clinical Child and Adolescent Psychology*, 31(4), 2002. 556‒566; Lueng, P. W., & Wong, M. M. Can cognitive distortions differentiate between internalizing and externalizing problems? *Journal of Child Psychology and Psychiatry*, 39, 1998. 263‒269.

22 Labrador, M., Labrador, F. J., Crespo, M., Echeburúa, E. (2020). Cognitive Distortions in Gamblers and Non-gamblers of a Representative Spanish Sample. *Journal of Gambling Studies* 36(1), 2020. 207‒222. DOI:10.1007/s10899-019-09870-z

23 Frey, & Epkins, *op. cit.*

24 Epkins, C. C. Cognitive specificity in internalizing and externalizing problems in community and clinic-referred children. *Journal of Clinical Child Psychology*, 29, 2000. 199‒208.

25 Liau, A. K., Barriga, A. Q., & Gibbs, J. C. (1998). Relations between selfserving cognitive distortions and overt vs. covert antisocial behaviour in adolescents. *Aggressive Behaviour,* 24, 1998. 335‒346.

26 Barriga, A. Q., Landau, J. R., Stinson, B. L., Liau, A. K., & Gibbs, J. C. *op.cit.*

quantitative, cross sectional approach in which the HIT was used to measure self-serving cognitive distortions.

To this date, in addition to cognitive distortions as predictors, the predictive role of sociodemographic characteristics (age, education, family system, native language, college, gender, religious sect, birth order) in the development of internalizing and externalizing behavioral problems has been investigated[27]. Also, in this research[28] male and female participant's scores were compared on all sub-scales of cognitive distortions as measured by the "HIT Questionnaire". The results of male students were higher than the results of female students on all subscales of the HIT. The research results also indicate that there were significant differences in HIT scores regarding age, in favor of older adolescents. Therefore, we can expect that older male students will achieve statistically significantly higher scores on all subscales of the "HIT questionnaire", but we cannot assume results related to other sociodemographic characteristics (place of residence, number of children in the family and family structure) on a sample of primary and secondary school students. In that part, the research is exploratory. In this regard, it is important to examine the sociodemographic characteristics of adolescents with more pronounced cognitive distortions, in order to individualize the treatment as much as possible and reduce cognitive distortions in a timely manner.

Practical assessment of the relationship between cognitive distortions and sociodemographic characteristics will help in the improvement and implementation of effective prevention and intervention techniques related to the reduction of cognitive distortions. Thus, the information that is obtained from this study is likely to be valuable for practitioners as it may assist in the development programs in which cognitive distortions are reduced.

Method

Sample

The sample in this research was convenient and consisted of 789 students, 471 of which were primary school students and 318 were secondary school students from Republic of Srpska entity. The research included 53.7% boys and 46.3% girls. The ages of the participants ranged from 12 to 19 years old (M = 14.92, SD = 1.79). 51.8% of respondents were from urban areas and 48.2% from rural areas. Most of

---

27 Ishrat, S. (2019). Cognitive distortions and behavioural problems in adolescents. Shifa Tameer e Millat University, Islamabad: The faculty of behavioural sciences Fatima Jinnah women university Rawalpindi, Department of behavioural sciences.

28 *Ibidem*

them come from two-parent (86.2%), two-child (63.2%) families, and according to the self-report, most of them were financially well off (76%). The parents' educational level is mainly secondary (70.1% mothers and 76.2% fathers).

Instrumentation

Cognitive distortion variables were measured with the How I Think Questionnaire (HIT-Q;[29]), which consists of 54 items. Only 39 actually measure self-serving cognitive distortions. The cognitive scales are self-centered (9 items), blaming others (10 items), minimizing/mislabelling (9 items) and assuming the worst (11 items). The remaining 15 items are not calculated in the HIT-Q total score. Eight of these make up the social desirability scale measuring socially desirable responding The other seven are prosocial items acting as positive fillers. Respondents rate the items on a six-point Likert scale (1 = strongly disagree and 6 = strongly agree). A high score indicates a stronger adherence to self-serving cognitive distortions.

Item examples of the four subscales can be seen in Table1. The values of the obtained Cronbach's alpha for individual subscales, as well as for the entire HIT-Q, are shown in Table 2.

Research procedure

Respecting the provisions of the Instruction on the Manner of Implementation of Programs, Projects and Other Activities in the Schools of the Republic of Srpska, the Ministry of Education and Culture (Department for Preschool, Primary and Secondary Education) was submitted a request to allow the research. After the approval of this Ministry, the research was successfully carried out in a period from November 2019 to January 2020. It was necessary to obtain the written consent of the parents to test the students, which was also done. Respondents filled out the questionnaires in their classrooms at a time when they were not included in their regular school obligations and tasks. They were provided with basic information on what is being researched, and it was emphasized that it was anonymous and that the results will be used exclusively for research purposes. Students received no payment for completing the questionnaires and their participation was strictly voluntary, with the right to withdraw at any time with no penalty. While filling in the questionnaire, the respondents would ask the researchers for the interpretation of individual items in the questionnaire and would continue with their work afterwards. In average, it took 45 minutes for respondents to complete the questionnaires.

---

29 Barriga, A. Q., Gibbs, J. C., Potter, G., & Liau, A. K. *op. cit.*

Results

Descriptive statistical indicators (M, SD) obtained on HIT-Q question-naire in relation to gender, age, place of residence, number of children in the family and family structure are shown in Table 2. During the time of analysis the age range was broken down into two groups. One group consisted of age range 13-15 and other 16-19. In order to determine the difference in self-serving cognitive distortions in relation to gender, age, place of residence, number of children in the family and family structure, five multivariate analyzes of covariates were conducted. These variables, individually, were analyzed in MANCOVA as criterion variables, or as covariates. Preliminary analyzes determined that the assumptions about the normality of the distribution, linearity, homogeneity of the variation, homogeneity of regression slopes and reliability of covariance measurement were not violated.

Table 1. Item examples of the HIT scales

Self-serving Cognitive Distortions	Item examples [a]
Self-centered	Rules are mostly meant for other people.
Blaming others	People force you to lie if they ask too many questions.
Minimizing/mislabelling	You have to get even with people who don't show you respect.
Assuming the worst	No matter how hard I try, I can't help getting in trouble.

[a] Barriga, Gibbs, Potter, G., & Liau, 2001.

After statistically eliminating the influence of covariates in each MANCOVA individually, it was established that students statistically differ in the self- serving cognitive distortions with respect to the gender – $\Lambda w = .962$, $F(1,787) = 6.16$, $p <0.01$, age – $\Lambda w = .965$, $F(1,787) = 5.67$, $p <0.01$, place of residence – $\Lambda w = .984$, $F(1,787) = 2.55$, $p <0.05$. and family structure – $\Lambda w = .98$, $F(1,787) = 2.51$, $p <0.05$. Research findings also indicate that there is no interaction effect with respect to number of children in the family – $\Lambda w = .99$, $F(1,787) = 0.81$, $p >0.05$, and then the separate (basic) influence on each dependent variable was evaluated (see Table 2).

Table 2 shows the results of five multivariate analyzes of covariates (F and p), a difference between students in relation to age, gender, place of residence, number of children in the family and family structure on individual scales of

questionnaire HIT-Q. The degrees of freedom for all F ratios in the table are df 1 = 1, df 2 = 787.

Table 2.
Descriptive statistics and MANCOVA results of students for the HIT-Q scores considering gender, age, place of residence, number of children in the family and family structure (N=789)

		Cronbach's Alpha (α)	Range	Gender M (SD)		Bonferroni test		
				Boys N=424	Girls N=365	Mean Difference (M1-M2)	Effect-size r/ Cohen's d	F
HIT-Q	Self-centered	.61	9-54	25.45(.36)	24.30(.39)	1.16*	0.84/3.06	4.60*
	Blaming others	.66	10-60	25.60(.38)	24.42(.41)	1.17*	0.83/2.99	4.39*
	Minimizing/ mislabeling	.61	9-54	26.25(.37)	23.78(.40)	2.47*	0.95/6.41	20.19***
	Assuming the worst	.64	11-66	28.17(.40)	26.14(.42)	2.02*	0.93/4.95	11.84**
	HIT-Q Total	.85						

		Cronbach's Alpha (α)	Range	Age M (SD)		Bonferroni test		
				Younger minors (13-15 years) N=566	Older minors (16-19 years) N=223	Mean Difference (M1-M2)	Effect-size r/ Cohen's d	F
HIT-Q	Self-centered	.61	9-54	24.42(.31)	26.18(.50)	-1.77*	-0.90/-4.23	8.84**
	Blaming others	.66	10-60	24.94(.32)	25.34(.52)	-0.40	-0.42/-0.93	0.43
	Minimizing/ mislabeling	.61	9-54	25.16(.32)	24.98(.51)	0.18	0.42/1.42	0.08
	Assuming the worst	.64	11-66	27.13(.34)	27.51(.55)	-0.38	-0.38/-0.83	0.34
	HIT-Q Total	.85						

		Cronbach's Alpha (α)	Range	Place of residence M (SD)		Bonferroni test		
				Urban N=409	Suburban/ rural N=380	Mean Difference (M1-M2)	Effect-size r/ Cohen's d	F
HIT-Q	Self-centered	.61	9-54	24.86(.37)	24.98(.38)	-0.13	-0.16/-0.32	0.06
	Blaming others	.66	10-60	24.82(.38)	25.31(.40)	0.49	-0.53/-1.25	0.80
	Minimizing/ mislabeling	.61	9-54	24.82(.38)	25.31(.39)	-0.60	-0.53/-1.27	1.20
	Assuming the worst	.64	11-66	26.48(.40)	28.05(0.41)	-1.57**	-0.89/-3.88	7.22**
	HIT-Q Total	.85						

		Number of children in the family M (SD)		Bonferroni test

			One child N=86	Two children and more N=703	Mean Difference (M1-M2)	Effect-size r/ Cohen's d	F
	Self-centered	.61	9-54	26.15(1.08)	24.77(.29)	1.38	0.66/1.74	1.38
	Blaming others	.66	10-60	25.77(1.12)	24.96(.30)	0.82	0.44/0.98	0.45
	Minimizing/ mislabeling	.61	9-54	26.37(1.11)	24.95(.30)	1.42	0.66/1.74	1.39
HIT-Q	Assuming the worst	.64	11-66	28.06(1.18)	27.14(.32)	0.91	0.47/1.06	0.51
	HIT-Q Total	.85						
			Family structure M (SD)		Bonferroni test		
			two-parent families N=679	single parent families N= 110	Mean Difference (M1-M2)	Effect-size r/ Cohen's d	F
	Self-centered	.61	9-54	24.76(.29)	25.91(.72)	-1.16	-0.72/-2.10	2.23
	Blaming others	.66	10-60	25.07(.30)	24.86(.75)	0.21	0.18/0.37	0.07
HIT-Q	Minimizing/ mislabeling	.61	9-54	24.86(.29)	26.61(.73)	-1.75*	-0.84/-3.15	4.93*
	Assuming the worst	.64	11-66	27.13(.31)	27.97(.78)	-0.85	-0.58/-1.42	1.00
	HIT-Q Total	.85						

*p < .05   **p < .01   ***p < .001

Bonferroni Test for subsequent comparisons found that boys have significantly more pronounced all four self-serving cognitive distortions – self-centered, blaming others, minimizing/mislabelling and assuming the worst as opposed to girls, who achieve lower scores in these dimensions (see Table 2). When it comes to age, as an independent categorical variable, it can be observed that older (16-19 yrs of age) minors engage (use) more self-serving cognitive distortions in everyday functioning, in contrast to younger ones (13-15 yrs of age). Respondents from suburbs, that is, rural areas, when it comes to the independent categorical variable place of residence, achieve higher scores on the self-serving cognitive distortion dimension of assuming the worst, in contrast to their peers from the city.

Considering family structure as an independent variable, children living in single-parent families score higher on the minimization/mislabeling self-serving cognitive dimension, in contrast to their peers who grow up with both parents.

Based on the Cohen's d coefficient, it can be seen that all statistically significant differences in arithmetic mean show the effect of high intensity (see Table 2).

Discussion and concluding remarks

Adolescence is a period of challenges. Many adolescents behaviour for example rejecting the values of parents, sexual experimentations, mood swings, trying to get autonomy, depression, not performing well in studies and drug use are considered problematic by parents and teachers[30]. Behind many of these teenage dramas and emotional outbursts are thinking errors. The reason why thinking errors affect teenagers is that they have not yet fully developed their cognitive capacity and do not know how to spot and manage their own thinking errors. In this regard, it is considered necessary to recognize these cognitive errors, and evaluate the difference in the manifestation of these thinking patterns, considering different socio-demographic characteristics, which are of key importance for the mental health of adolescents and the assessment of their future.

The main objective of this study was to examine the mean differences in the self- serving cognitive distortions with respect to the gender, age, place of residence and family structure. The results of the research conducted on a sample of primary and secondary school students from Republic of Srpska entity show that there is a statistically significant difference in the self- serving cognitive distortions with respect to the gender, age, place of residence and family structure. The results of the research also indicate that there is no interaction effect in relation to the number of children in the family, as well as no special (basic) influence on the criterion variables.

In this research, based on the findings of earlier research, it was assumed that older male students will achieve statistically significantly higher scores on all subscales of the "HIT questionnaire". The obtained results indicate that boys have significantly more pronounced all four self-serving cognitive distortions – self-centered, blaming others, minimizing/mislabelling and assuming the worst as opposed to girls, who achieve lower scores in these dimensions. This finding is consistent with the results of earlier research. This hypothesis, supported by the results of earlier research, has been fully confirmed. In one study[31] male and female participant's scores were compared on all sub-scales of cognitive distortions as measured by the „HIT Questionnaire". Scores of male students was consistently higher than female students on all the sub-scales of cognitive distortion. Despite these differences in findings by gender, caution

---

30 Candace, J., Erickson, M. D., Stanford, B. & Friedman, M. D. Understanding and Evaluating Adolescent Behavior Problems. Journal of School Health Vol. 48, Issue 5, 1978. 261–318. https://doi.org/10.1111/j.1746-1561.1978.tb03818.x

31 Ishrat, S. *Op. cit.*

must be used when interpreting these data. While conclusion could be drawn that males possess greater self-serving cognitive distortions than females, it may be the case that males were simply more truthfull when answering the questions on cognitive distortions. Societal influences may send the message to children that it is more acceptable for males than females to have deviant thoughts and beliefe[32].

When it comes to age, as an independent categorical variable, statistically significantly higher scores on all subscales of the HIT questionnaire are expected, in favor of older minors. It can be seen that older minors (16-19 years old) engage (use) only one self-serving cognitive distortion - egocentric (centered on self) in their daily functioning, in contrast to younger ones (13-15 years old). In this regard, this hypothesis was partially confirmed. In the aforementioned study[33] in which the age range was divided into two groups, one group consisted of age in the range of 16-19, and the other in the range of 20-22, older respondents also had more pronounced cognitive distortions compared to the younger group of respondents. Given that the younger group of respondents in the mentioned research corresponds to the older group in our research, the question arises at what age cognitive distortions occur.

Given the independent categorical variable place of residence, respondents from suburbs, that is, rural areas, achieve higher scores on the self-serving cognitive distortion assuming the worst, in contrast to their peers from the city. It is possible that students from suburban or rural areas are distrustful and insecure in relation to their peers from the city, and attribute hostile intentions to them. In addition, students from single-parent families achieve statistically significantly higher results on self-serving cognitive distortion – minimization. This result may be due to weaker parental supervision, when these individuals perceive antisocial or aggressive behavior as acceptable. The preliminary results of this research have theoretical and empirical significance. We believe that the results of this research can contribute to the individualization of treatment related to cognitive distortions. From a practical standpoint, it represents an important step towards the creation of different treatment programs for cognitive distortions.

Different treatment programs for both cognitive distortions and internalizing externalizing problems are mostly comprised of programs based on prevention, psychological intervention and/ or medical treatment[34]. The purpose

---

32 Santrock, J. W. Child Development (13th ed.). New York, NY: McGraw-Hill. p. 360.

33 Ishrat, *op. cit.*

34 Bayat, M. The effectiveness of child-centered game therapy on reduction of the symptoms of externalizing problems in children. MA thesis of child and adolescent clinical psychology, University of Shahid Behshti, Tehran, Iran, [In Persian]. 2008.

of conducting prevention programs is to prevent the rise of internalizing and externalizing problems during childhood. Psychoanalytical techniques focus on past, unconscious and repressed thoughts of individuals having cognitive distortions or externalizing internalizing behavioural problems. These techniques, through different approaches, provide different opportunities for mental improvement and expression of guilt, thoughts, concerns, emotions and problems.

One of the intervention that is based on psychoanalytical techniques is Art therapy. This technique uses different kind of arts media for healing and treatment of psychological and mental health problems. It is easy for the clients to share their thoughts when art media is used[35]. Art making, when viewed from the psychotherapeutic realm is helpful in providing a congenial and non-verbal way of communicating challenging thoughts, conflicts, desires, and emotion. It allows an individual to challenge and antagonise those thoughts. Try to get through those experiences and emotions and ultimately assimilate all those experiences that the client may find difficult to express or hard to speak out. When the client is able to speak the unspeakable, therapeutic process becomes easy because now the therapist can get direction to lead the therapeutic process[36]. Experiences in art therapy include but are not limited to music, theatre, dance, painting, and different movements. All these activities are performed in a serene comfortable environment[37]. Art therapy is one of the most effective technique for an individual to obtain personal control, exploring existential concerns of an individual and connecting different aspects of the self together[38].

According to Beck's cognitive behaviour therapy impulsive individuals interpret the events around them in a negative and distorted way that is why they act hastily without thinking about the consequences of behavior[39]. Consistent with some other findings conducted in the field of cognitive psychology, cognitive distortions can create hurdles in assimilating different information and

---

35 Bazargan, Y., & Pakdaman, S. The effectiveness of art therapy in reducing internalizing and externalizing problems of female adolescents. *Archives of Iranian medicine*, 19(1), 2016. 51‒56; Dilawari, K., Tripathi, N. (2014). Art therapy: A creative and expressive process. *Indian Journal of Positive Psychology*, 5(1), 2014. 81 – 85.

36 Assouline A. Uncovering identity within the experience of chronic illness: Art therapy and integration. A Research Paper in the Department of Creative Arts Therapies in Partial Fulfilment for the Degree of Master of Arts. Concordia University, Montreal, Quebec, Canada. 2009.

37 Boehm, K., Cramer, H., Staroszynski, T., & Ostermann, T. (2014). Arts therapies for anxiety, depression, and quality of life in breast cancer patients: a systematic review and meta-analysis. Evidence-based complementary and alternative medicine. DOI: 10.1155/2014/103297

38 Assouline, *op. cit.* p. iii

39 Mobini et al., *op. cit*. p. 1162

in response making therefore that behaviour seems be unintentional and unrelated to consequences. These results indicate that cognitive-behaviour therapy that aims to target information processing that is characterised by different kind of errors in the thinking may help high-impulsive people control their emotions and behaviour more effectively, by increasing social conformity and control on their selves Mobini et al.[40].

We believe that present study was helpful in extending the research on the dimension of psychopathology during adolescence. It has a number of strengths. First is the use of a large sample of adolescents, which fills a gap in the extant literature by providing generalizable results to a broader population base than community based population, mentally ill or youth incarcerated in correctional institutions. Second, the inclusion of male and female students in the examination of cognitive distortions is an important addition to the extant literature. The examination of gender effects provides a more generalizable set of findings and differs from many of the previous studies that only included males. Third, identifying cognitive distortions in youth would be helpful in finding out how youth can be improved either through psychotherapy or psycho-education.

Also, identifying potentially at-risk youth who may develop cognitive distortions would be helpful in preventing internalizing and externalizing problems during childhood. Some of the guidelines for teachers and professional services in schools, considering cognitive distortions, refer to defining the problem. That is the first and most important step. In this regard, it is first necessary to examine what is the problem of a particular student and what is the problem of another person. Then it is necessary to ask the student to think and say several possible solutions to the problem. It is necessary that potential solutions to the problem be realistic and effective, so that the students, with the help of teachers/professional services, select the best solution and determine the time frame for solving it. Recognizing errors in thinking and their association with socio-demographic characteristics, respectively individualization of treatment, can prove helpful for mental health counsellors and the general public in order to to improve the mental state of young people in the Republic of Srpska entity.

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 dis-

---

40 *Ibidem*, p. 1162

tortions. As such, these distortions were not able to be measured as they actually occurred. One limitation of the current study is its research design. From the current research design cause and effect cannot be studied. The HIT-Q was used to assess cognitive distortions in the current study. This questionnaire is intended to assess specific cognitive distortions, thus limiting the participants to only those choices, potentially overlooking other known cognitive distortion. In this research, main threat to internal validity have been identified as limitations to the research. Although the threats have been minimized due to the use of certain procedures within this study, future research may avoid such threat by using alternative measurement techniques. The threat to internal validity in this study involved subject effects. In order to measure cognitive distortions self-report questionnaires were used. When using self-report measures, there is a risk that respondents may respond untruthfiily due to a need to appear positive and "socially desirable".

Future research needs to address the issue of cognitive distortions across time. Do distortions change from one age period to another and when they arise? Specifically, whether specific cognitive distortions are utilized more than others as respondents grow older? Do individuals have a "preference" of which specific cognitive distortions are used? If so how does this preference develop? Is it based on effectiveness, or cognitive changes? In order to gain a potentially more valid indication of an individual's cognitive distortions they may need to be measured across time and in "real time." In to do this a methodology would need to be used that incorporated situations that were more authentic than written vignettes or questions, such as visual representations of distortion inducing behaviours[41].

References

- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: Author.
- Assouline A. (2009). Uncovering identity within the experience of chronic illness: Art therapy and integration. A Research Paper in the Department of Creative Arts Therapies in Partial Fulfilment for the Degree of Master of Arts. Concordia University, Montreal, Quebec, Canada.
- Barriga, A. Q., & Gibbs, J. C. (1996). Measuring cognitive distortion in

---

41 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*, 2008. 181–189.

antisocial youth: Development and preliminary validation of the "How I Think" questionnaire. *Aggressive Behaviour, 22*, 333–343.

- Barriga, A. Q., Gibbs, J. C., Potter, G., & Liau, A. K. (2001). The How I Think Questionnaire manual. Champaign, IL: Research Press.
- Barriga, A. Q., Hawkins, M. A., & Camelia, C. R. T. (2008). Specificity of cognitive distortions to antisocial behaviours. *Criminal Behaviour and Mental Health, 18*, 104–116. doi:10.1002/cbm.683.
- 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.
- Bayat, M. (2008). The effectiveness of child-centered game therapy on reduction of the symptoms of externalizing problems in children. MA thesis of child and adolescent clinical psychology, University of Shahid Behshti, Tehran, Iran,[In Persian].
- Bazargan, Y., & Pakdaman, S. (2016). The effectiveness of art therapy in reducing internalizing and externalizing problems of female adolescents. *Archives of Iranian medicine, 19*(1), 51‑56.
- Boehm, K., Cramer, H., Staroszynski, T., & Ostermann, T. (2014). Arts therapies for anxiety, depression, and quality of life in breast cancer patients: a systematic review and meta-analysis. Evidence-based complementary and alternative medicine. DOI: 10.1155/2014/103297
- Bruno, T. (2010). What are they thinking? Cognitive distortions and adolescent externalizing and internalizing problems (Doctoral dissertation). The University of British Columbia, Vancouver, Canada.
- Candace, J, Erickson, M. D, Stanford, B. & Friedman, M. D. (1978). Understanding and Evaluating Adolescent Behavior Problems. Journal of School Health Vol. 48, Issue 5, 261‑318. https://doi.org/10.1111/j.1746-1561.1978.tb03818.x
- Dilawari, K., Tripathi, N. (2014). Art therapy: A creative and expressive process. *Indian Journal of Positive Psychology*, *5*(1), 81 – 85.
- Epkins, C. C. (2000). Cognitive specificity in internalizing and externalizing problems in community and clinic-referred children. *Journal of Clinical Child Psychology, 29*, 199–208.
- Frey, E. D., & Epkins, C. C. (2002). Examining cognitive models of externalizing and internalizing problems in subgroups of juvenile delinquents. *Journal of Clinical Child and Adolescent Psychology, 31*(4), 556‑566.
- Gibbs, J. C, Barriga, A. Q., & Potter, G. (1996). The "How I Think" questionnaire. Unpublished manuscript, The Ohio State University, Colum-

bus, OH.

- Gibbs, J. C, Potter, G. B., Barriga, A. Q., & Liau, A. K, (1996). Developing the helping skills and prosocial motivation of aggressive adolescents in peer group. *Aggression and Violent Behavior, Vol. 1*, No. 3, pp. 283‒305.
- Helmond, P., Overbeek, G., Brugman, D., & Gibbs, J. C. (2015). A metaanalysis on cognitive distortions and externalizing problem behaviour: Associations, moderators, and treatment effectiveness. Criminal Justice and Behaviour, 42(3), 245‒ 262.
- Ishrat, S. (2019). Cognitive distortions and behavioural problems in adolescents. Shifa Tameer e Millat University, Islamabad: The faculty of behavioural sciences Fatima Jinnah women university Rawalpindi, Department of behavioural sciences.
- Labrador, M., Labrador, F. J., Crespo, M., Echeburúa, E. (2020). Cognitive Distortions in Gamblers and Non-gamblers of a Representative Spanish Sample. *Journal of Gambling Studies 36*(1), 207‒222. DOI:10.1007/s10899-019-09870-z
- 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.
- Lueng, P. W., & Wong, M. M. (1998). Can cognitive distortions differentiate between internalizing and externalizing problems?. *Journal of Child Psychology and Psychiatry, 39*, 263‒269.
- Mobini, S., Pearce, M., Grant, A., Mills, J., & Yeomans, M. R. (2006). The relationship between cognitive distortions, impulsivity, and sensation seeking in a nonclinical population sample. *Personality and Individual Differences, 40*(6), 1153‒1163.
- 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.
- Santrock, J. W. (2011). Child Development (13th ed.). New York, NY: McGraw-Hill.