



12-2019

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Recommended Citation

Sana, Fatima and Rafiq, Muhammad (2019) "Development and validation of juvenile Criminal thinking styles' inventory," *Pakistan Journal of Neurological Sciences (PJNS)*: Vol. 14 : Iss. 4 , Article 6.

Available at: <https://ecommons.aku.edu/pjns/vol14/iss4/6>

DEVELOPMENT AND VALIDATION OF JUVENILE CRIMINAL THINKING STYLES' INVENTORY

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Date of submission: April 11, 2019 **Date of revision:** July 29, 2019 **Date of acceptance:** August 05, 2019

ABSTRACT:

The current research explored the styles of criminal thinking among juvenile delinquents in Pakistani cultural context. Initially, 40 juvenile delinquents were interviewed individually to generate an item pool of 34 distinct thought statements. After excluding repetitive items a list of 19 items was piloted on 30 juvenile delinquents as a self-report measure of 5-point rating scale (Juvenile Criminal Thinking Styles' Inventory). Finally, a sample of 211 juvenile delinquents were given the final list of 19 items, Measure of Criminal Social Identity (Boduszek, Adamson, Shevlin, & Hyland, 2012; Shagufta, 2015), and a demographic form. Principal Component factor analysis determined a three factor solution, namely Social Alienation, Vindication, and Domination. The inventory found to have high internal consistency and concurrent validity. The outcomes are discussed in terms of the implications of criminal thinking styles for juvenile correctional counselling services and propose further research.

Keyword: Juveniles, alienation, domination, vindication, criminal thinking

INTRODUCTION

Juvenile delinquency is one of the rising concerns not only in Pakistan, but also around the globe and these concerns are alarmingly increasing in terms of crime rates. Mainstream of juvenile delinquents are male, who are involved in illegal and violent crimes such as property crimes (burglary, theft, shoplifting, arson and vandalism), murder, rape etc. (Sarwar, 2016). Siegel and Welsh (2015) indicated that the types of crimes are getting more violent in terms of globalization. It is very important to develop an instrument for assessment of this problem. Many research studies related to criminality and social psychology have shown embedded and traditional criminal thinking styles as significant predictors of criminal behavior. Understanding the reasons behind crimes requires an approval and gratitude for the complexity and intricacy of human behavior, because behavior is not based on one single aspect, but relatively motivated by a crowd of interconnected aspects (Bandura, Reese, & Adams, 1982; Hubbard & Pealer, 2009; Listwan, 1996; Listwan, Van Voorhis, & Ritchey, 2007). Therefore, person and systemic level aspects are equally necessary and important in order to describe recent behavior and to predict upcoming behavior (Listwan, 1996). There are several approaches (see e.g., Agnew, 1992, 1993, 2006; Boduszek & Hyland, 2012;

Maruna & Copes, 2005; Shagufta, 2015; Sykes & Matza, 1957; Walters, 1990; Yochelson & Samenow, 1976, 1977) that describe irrational and criminal thinking of delinquents. As many criminals see themselves as conformist instead of anti-social, majority of them aim to justify and rationalize their criminal actions. The extent of recognition and support of antisocial peers is a significant predictor indicating the influence of these peers on individuals and this influence may promote the risk of antisocial behavior. Moreover, people become delinquents because of criminal social identity that initiates from antisocial factors. These factors were carried out by persons who face failure while interacting conventionally and show non acceptable behavior; motivated by criminal peers. According to Strain theory, inability to achieve major goals in life may cause anger and frustration (Agnew, 1992, 1993, 2006); also, these are negative feelings of frustration, jealousy, anger, self derogation, agony, antipathy, and aggression that may be provoked by familial factors like lack of affection, inappropriate parenting styles, or parental rejection (Loeser, Whiteman, & McHale, 2016; Maduro, 2016; Salovey & Rodin, 1984; Simon, Whitbeck, Conger, Wu, 1991). Environment brings influential experiences; this contradictory behavioral attitude is considered as the

defense mechanism that is used by juvenile delinquents as protective shield. Further, this rationalization and vindication serves as against the loneliness of instinctual actions or pseudo-gratification of urges with only aim to stop “the intolerable excitement” rapidly. These pervasive maladaptive thinking patterns comprise of beliefs and thoughts (such as commit crimes in desperation state) that are apparent in various phases of their lives (see e.g., Rodriguez, 2010; Walters, 1990; Yochelson & Samenow, 1976, 1977). The considerable method to study the relationship between psychological variables and criminal constructs is a lifestyle theory of cognitive perspective. This theory explains “three C’s”: conditions, choice, and cognition (Walters, 1990, pp. 51-53) that influence the criminal lifestyle. In this model, conditions include heredity, social interactions with family, or blend of nature and nurture. These conditions are not necessarily responsible for criminal behavior, although provide an individual with options to choose from. The individual then modifies the thinking in order to defend an act (choice) that exhibits the perceptions (cognitions). The cognitions of an individual such as criminal thinking are formed to combine and defend interpersonal intrusiveness, involvement, and irrational thoughts. Alongside cognitions, criminogenic needs generally play a crucial role in describing delinquent’s beliefs, thoughts, and values that consequently motivate delinquents to commit crimes (Andrews & Bonta, 2010). Specifically, the notion of criminal thinking arises many questions about how criminal thinking is associated to antisocial behaviors that might involve typical and predictable egocentric defence mechanisms (Perri, 2013; Taxman, Rhodes, & Dumenci, 2011). Juvenile Criminal Thinking has been defined as “a distorted thought pattern used by a child in order to support an antisocial behavior.” Mainly, criminal thinking is a distorted thought pattern that includes actions and principles in order to support criminal lifestyle by giving reasons and justifications for offensive behavior (see Perri, 2013, p. 333; Perri, Brody, & Paperny, 2014, p. 4; Taxman et al., 2011). For that reason, criminogenic needs are characterized as criminal thinking distortions (Walters, 2003a), because delinquents who are likely to exhibit more criminal thinking distortions have tendency to make incorrect decisions; further these distortions affect their future delinquent behavior (Walters, 2006). Criminal thinking suggests that criminal’s lifestyle is particularly linked to certain thinking patterns, which actually bears their criminal activities. This further leads to the notion of “criminal personality”, which describes typical actions or behaviors of adult offenders, primarily reasons and excuses, but also suggests that they are

extreme or intense among those who mature into delinquents (Walters, 2003b). The model of Juvenile Criminal Thinking has been devised on the theoretical and pragmatic work of Walters (2006) that emphasizes on lifestyle of an adult criminal that incorporate inherent rationalizations and justifications for criminal acts. At first, the termed of criminal thinking was coined by Yochelson and Samenow in 1976 as a personality approach for adult offenders. They both identified conventional and usual psychiatric techniques as unsuccessful with the prisoners, because most of these delinquents used psychological expressions in order to rationalize and justify their illegal behavior. Later, Walters (1990, 1995a, 1995b, 2002, 2003a, 2006) defined and presented criminal thinking as “the thought content and cognitive processes conducive to the commencement and continuation of persistent anti-social and criminal conduct” (p. 28) and developed an inventory, named as Psychological Inventory of Criminal Thinking Styles (PICTS; Walters, 1995a, 1995b) on adult criminal thinking styles. Essentially, Walters’ theory of criminal thinking views the individual’s cognitive processes, as offense is a lifestyle, which is related to a set of criminal attitudes and beliefs that incorporate hidden rationalizations and justifications for criminal activities (Boduszek & Hyland, 2012). Even though, Walters was moderately in opposition to Yochelson and Samenow’s outcomes, but he included nearly all of the factors of their theory in his Psychological Inventory of Criminal Thinking Styles (PICTS; Walters, 1995a, 1995b) including eight cognitive distorted patterns of criminal thinking, most importantly mollification (justification and blaming external factors), cutoff (quickly ignoring thoughts that stop from illegal acts) for adult criminal activities. Therefore, at that point an assessment tool is needed to measure juvenile criminal thinking styles, because adolescents’ thought patterns are somewhat distinct and premature. Moreover, the PICTS is validated on western population of delinquents and the outcomes showed significant association with previous measures of criminality (Walters, 2003b). However, these measuring tools require validation and implementation in accordance to Pakistani cultural norms. The Criminal Thinking Scale (CTS) was developed by Knight, Garner, Simpson, Morey, & Flynn (2006). CTS was assembled on the model of PICTS and contained 37-items with six factors, such as Entitlement, Mollification (Justification), Personal Irresponsibility, Criminal Rationalization, Cold Heartedness, and Power Orientation. Factually, the previous models of criminal thinking styles were more clinical rather than psychological; further, these models have limited cross-cultural validation and utilization, because of

western expression hindrances. Later, Sana and Batool (2017) developed and validated an Indigenous Criminal Thinking Scale (ICTS) in accordance to Pakistani culture. ICTS was assembled on the model of Criminal Thinking Scale (CTS; Knight et al., 2006). It has 24-items to measure criminal thinking with five factors, namely Criminal Rationalization, Power Orientation and Justification, Personal Irresponsibility, Vindication, and Entitlement. In previous studies, a significant relationship between criminal attitudes and criminal behavior has been found (e.g., Andrews & Bonta, 2010; Andrews & Kandel, 1979; Boduszek, Adamson, Shevlin, Hyland, & Bourke, 2013; Boduszek, Dhingra, & Debowska, 2016; Engels, Luijpers, Landsheer, & Meeus, 2004; Mills, Kroner, & Forth, 2002; Nesdale, Maass, Kiesner, Durkin, Griffiths, & James, 2009; Simourd & Van De Ven, 1999; Stevenson, Hall, & Innes, 2003; Vitaro, Brendgen, & Tremblay, 2000; Walters, 2002), signifying that those individuals who show a consistent criminal thinking pattern, also who have ingrained concept of criminal behavior, are at a greater possibility of involving in criminal acts. However, these researches are based on western findings, so to determine cultural results criminal thinking styles have been explored among juvenile delinquents. The current research is helpful in identifying styles of criminal thinking in juvenile delinquents of Pakistan. There are many scales that measure criminal thinking in adult delinquents, but there are limited assessment tools that could assess criminal risk and criminogenic needs and underlying reasons behind their criminal behavior. By considering the background and limited research in Pakistan, it is essential and necessary to carry out investigation in this area. Therefore, the current research aims at investigating and determining the psychometric properties of the JCTSI, when administered on juvenile delinquents of Pakistani jails. The current research pragmatically examined the following aims:

- Develop a Juvenile Criminal Thinking Styles Inventory (JCTSI) to assess the criminal thinking styles among juvenile delinquents.
- Determine the psychometric properties of Juvenile Criminal Thinking Styles Inventory (JCTSI).

METHOD

Phase I: Generation of Items

A phenomenological approach was used to explore different thought patterns and expressions of juvenile delinquents. For this purpose, 40 juvenile delinquents in the age range of 10 to 17 years were included ($M = 15.83$, $SD = .93$), out of which 22 (55%) were

uneducated, 4 (10%) were in 1st to 5th class and 14 (35%) were in 6th to 11th class. They were selected through purposive sampling and were asked open-ended questions in Urdu, mainly 'What thoughts make you feel separated and estranged from others?', 'How does one justify one's committed mistakes and crimes?', and 'What thought does make one delinquent person stronger and prominent among others?.' every participant was interviewed individually and further questions were asked for more clarity. After exploration, based on open-ended discussions, all items were collected by using content analysis and a list of 34 items was developed. The list of 34-items was given to three psychologists, to Civil Service Officer of Pakistan in crime branch, and to three were criminologists, who had understanding of the research problem in hand. After experts evaluation, ambiguous and recurring items were excluded and a list of 19 items was finalized (Juvenile Criminal Thinking Styles Inventory (JCTSI)) for further exploration of psychometric properties.

Phase II: Pilot Study

The purpose of this try out phase was to determine the feasibility of the construct and also find out the reliability and responsiveness of the items. For that reason, the inventory was initially administered on 30 juvenile delinquents from Punjab Prisons, who were imprisoned for almost 36 months. No difficulties were reported during self-administration and administration by interviewer. It took 10 to 15 minutes to complete the scale.

Phase III: Main Study

The main study was aimed to determine the factorial structure and psychometric properties of Juvenile Criminal Thinking Styles Inventory (JCTSI).

Participants. The sample consisted of 211 juvenile delinquents (imprisoned for 1 to 60 months) from Punjab Prisons of Pakistan, age ranged from 10 to 17 years ($M = 15.80$, $SD = 1.21$). The sample of juvenile delinquents was divided into main strata according to the type of committed crime (violent or nonviolent) i.e., 153 (72.5%) juvenile delinquents committed violent crimes and 58 (27.5%) juvenile delinquents committed nonviolent crimes. Further subdivided according to the educational level i.e., 78 (37%) juvenile delinquents were uneducated, 54 (25%) were in 1st to 5th class and 79 (37%) were in 6th to 11th class and residential background of juvenile delinquents i.e., 110 (52.1%) were from urban areas and 101 (47.9%) from rural areas.

MEASURES.

Demographic Performa. Demographic performa. The demographic information included age, level of education, residential background (urban or rural), type of crime (violent or nonviolent), and time period of imprisonment (in months).

Juvenile criminal thinking styles' inventory (JCTSI): The newly developed JCTSI was used for measuring criminal thinking styles among juvenile delinquents. JCTSI comprised of 19 thoughts as expressed by juvenile delinquents. The items of JCTSI were rated on 5-point Likert Scale ranging from strongly disagree (1) to strongly agree (5). The possible minimum score for 19 items was 19 and maximum score could be 95. The high score indicated high criminal thinking of juvenile delinquent.

Measure of criminal social identity (MCSI): Boduszek et al. (2012) developed MCSI and was translated in Urdu by Shagufta (2015). In current research it was sued to establish the concurrent validity of JCTSI. MCSI intended to measure prisoner's criminal social identity and it consists of 8 items with 5-point Likert scale (5=strongly agree to 1=strongly disagree). It had three subscales namely Cognitive Centrality (measures psychological importance of delinquent group identity), In-group Affect (measures delinquents' feelings, attitudes or emotional attachment to in-group delinquents), and In-group Ties (measures level of personal bonding to other delinquents). High score on MCSI reflected high criminal social identity. The MCSI was found to have satisfactory psychometric properties (see Boduszek et al., 2012; Shagufta, 2015, for discussion).

Procedure:

Procedure. The data was collected from prisons with the support of prison administration and with the permission of Inspector General (IG) of Punjab Prisons, Pakistan. The participants were purposively selected and those who were educated enough for self-administration were given the final research protocol comprising of demographic form, JCTSI, and MCSI and other research protocols which were filled through transcription procedure. The average completion time of protocol was 15 minutes. The participants were debriefed and ensured about the anonymity and confidentiality of collected data. Total 211 juvenile delinquents participated.

RESULTS

This section contains the factorial structure and psychometric properties of JCTSI.

Demographic Information

The demographic information included age, level of education, residential background (urban or rural), type of crime (violent or nonviolent), and time period of imprisonment (in months).

Table 1

Means, Standard Deviations of Age, Period of Confinement (in Months), and Number of Committed Crimes by Juvenile Delinquents (N=211)

Variable	M	SD
Age	15.80	1.21
Period of confinement	9.86	11.92
No. of committed crimes	1.38	1.26

As shown in Table 1, the means, standard deviations of age, education, period of confinement (in months), and number of committed crimes by juvenile delinquents. The age range of participants was 10-17 years with mean age of 15.80 (SD=1.21). The average period of confinement was 5 months, the minimum period of confinement was 3 weeks, and the maximum period of confinement was 60 months with mean of 9.86 (SD=11.92). The minimum number of committed crimes was 1 and the maximum number of committed crimes was 11 with mean of 1.38 (SD=1.26).

Table 2

Frequency Percentage of Education, Crimes, Crime Types, and Location of Juvenile Delinquents (N=211)

Variable	f%
Education	
Uneducated	78 (37%)
1-5 class	54 (25%)
6-11 class	79 (37%)
Committed Crimes	
Murder	87 (41%)
Theft	38 (18%)
Sexual Assault/Rape	31 (14.7%)
Kidnapping	6 (2.8%)
Robbery	15 (7.1%)
Fighting	10 (4.7%)
Drugs Smuggling	24 (11.4%)
Crime Types	
Violent	153 (72.5%)
Nonviolent	58 (27.5%)
Location	
Rural	101 (47.9%)
Urban	110 (52.1%)

As shown in Table 2, the frequency percentages of education, committed crimes, crime types, and location of juvenile delinquents. The sample of participants was divided into three main educational

categories including uneducated 78 (37%), from 1-5th class 54 (25%), and from 6-11th class 79 (37%). Among the juvenile delinquents 87 (41%) committed murder, 38 (18%) committed theft, 31 (14.7%) committed rape or sexual assault, 6 (2.8%) kidnapped someone, 15 (7.1%) did robbery with associates, 10 (4.7%) fought with someone, and 24 (11.4%) were involved in drugs smuggling. Further, by incorporating all these committed crimes 153 (72.5%) juvenile delinquents committed violent crimes and 58 (27.5%) committed nonviolent crimes. The maximum of juvenile delinquents were from urban areas 110 (52.1%) and minimum were from rural areas 101 (47.9%). The overall results suggest that many juvenile delinquents who were educated and belonged to urban areas committed violent crimes, mainly murder.

Item Analysis

Item analysis was done by computing item-total correlation on 34 items of JCTSI, but only 19 items of JCTSI showed significant item-total correlation. Those items that showed values less than .20 were not retained and considered in final factor structure. The Kaiser-Meyer-Olkin (KMO) value was .78 and Bartlett's Test of Sphericity value was significant ($\chi^2 (171) = 1029.56, p < .001$) for 19 items of JCTSI.

Table 3

Factor Structure, Eigen Values, and Item-Total Correlations of 19 items of Juvenile Criminal Thinking Styles' Inventory with Varimax Rotation (N=211)

Sr. No	Item No	Factor I	Factor II	Factor III	r
1	14	.72	.13	.14	.54**
2	11	.71	.17	.02	.50**
3	10	.69	.07	.13	.49**
4	13	.67	.03	-.05	.37**
5	6	.66	.10	.10	.47**
6	12	.62	.10	.13	.45**
7	16	.55	.02	.06	.34**
8	15	.55	-.14	.18	.32**
9	3	-.03	.78	.14	.34**
10	26	.05	.72	.13	.37**
11	4	.05	.68	.05	.32**
12	2	.24	.65	.05	.42**
13	9	.07	.65	-.04	.28**
14	19	.11	-.09	.72	.37**
15	5	-.01	.02	.68	.21**
16	23	.13	.07	.64	.33**
17	34	.06	.07	.59	.29**
18	25	.12	.20	.56	.32**
19	8	.12	-.09	.55	.36**
Eigen Values		4.31	22.68	22.68	
% Variance		2.27	11.94	34.62	
Cumulative%		2.03	10.69	45.31	

Note. F I= Factor 1; F II= Factor 2; F III= Factor 3. r = Item-total correlation .20 or above are significant at **p < .01.

As shown in Table 3, the criteria was .50 or above (Kline, 1993) for retaining items in factors and the items within this range were retained in their respective factors. In order to obtain best fit model 6, 5, 4, and 3 factor solutions were tried, but three factor solutions for JCTSI was found to be best fit with least dubious items and clearly defined factor structure. Those items that showed factor loadings less than .50 were excluded from final structure of JCTSI, also the items with dubious loadings were considered according to their content for retention in an appropriate factor. Total 45.31% variance was explained by three factors. Further, every factor has minimum 5 items and maximum 7 items.

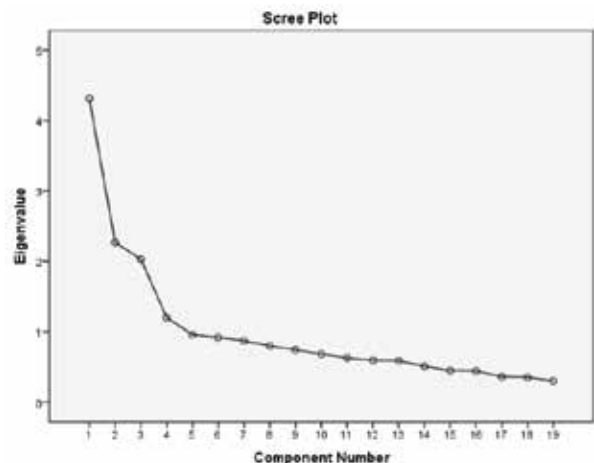


Figure 1. Scree plot showing extraction of factors of Juvenile Criminal Thinking Styles' Inventory (JCTSI).

As shown in Figure 1, the Eigen values and number of factors that could be retained for final structure of scale. The scree plot is determining the number of factors. The retention criteria of Kaiser-Guttman (Kaiser, 1974) revealed three factors whose Eigen values are greater than 1.

Factors Description

On the basis of close examination of the items, each corresponding factor was a label by considering common themes emerged by each item.

Factor 1: Domination. The first factor contains 8 items. A high score on this subscale refers to a belief that one person has full control or influence over others. The items included 'I love fighting', 'no one can catch me', 'I do not like feeble people', 'people are

afraid of me', etc.

Factor 2: Social alienation. The second factor contains 5 items. A high score on this subscale refers to a distorted thinking pattern that makes a child to feel isolated or dissociated from family, peers, and community. The items included 'everyone hates me', 'parents do not give me much time', 'it seems like I am a burden to my parents', etc.

Factor 3: Vindication. The third factor consists of 6 items. A high score on this subscale refers to a thinking pattern of justifying or rationalizing one's acts by blaming others such as government, family, peers, and community. The items included 'society holds responsible others for their sins', 'a person is compelled to steal', 'it is justifiable to take the law into hands for honour', 'unemployment is the major cause of crime', etc.

Psychometric Properties of JCTSI

In order to determine the psychometric properties of JCTSI, the construct validity and concurrent validity were computed.

Construct validity. JCTSI has a significant positive correlation with three factors. Further, Cronbach's Alpha value ranges from .71 to .81 showing that inventory have acceptable internal consistency.

Concurrent validity. The concurrent validity of JCTSI is established with MCSI. The results reveal a significant positive correlation between total of JCTSI and MCSI ($r = .51, p < .01$), which shows juvenile delinquents who have distorted thinking patterns are associated to delinquent peer groups as measured on MCSI. As juvenile delinquents who have high social criminal thinking tend to be connected more strongly and directly to delinquents peers (see Table 4).

Table 4
Summary of Intercorrelations, Means, Standard

Factor	1	2	3	4	MCSI T
1. Domination	—	.22**	.27**	.80**	.48**
2. Social Alienation		—	.19**	.64**	.18*
3. Vindication			—	.63**	.38**
4. Total of JCTSI				—	.51**
<i>M</i>	32.16	18.75	25.68	76.58	32.58
<i>SD</i>	6.10	4.48	3.83	10.17	4.86
α	.81	.75	.71	.80	.72

Note. JCTSI = Juvenile Criminal Thinking Styles' Inventory, MCSI T = Total of Measure of Criminal Social

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

Types of Committed Crime Differences on JCTSI

As shown in Table 5, the juvenile delinquents who committed violent and nonviolent are significantly different on domination, vindication, and total of Juvenile Criminal Thinking Styles' Inventory.

Table 5

Means, Standard Deviations, t and p values of the Type of Committed Crime by Juvenile Delinquents on JCTSI, and its Subscales (N=211)

Scale	Violent (n=153)	Nonviolent (n=58)	<i>t</i> (209)	95% CI		Cohen's <i>d</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		LL	UL	
1. D	31.46(6.21)	33.98(5.43)	2.72**	-4.35	-.69	.43
2. SA	18.51(4.47)	19.38(4.50)	1.26	-2.23	.49	.19
3. V	25.32(3.96)	26.62(3.32)	2.22*	-2.45	-.15	.35
4. JCTSI T	75.29(10.30)	79.98(9.05)	3.05**	-7.72	-1.66	.48

Note. D = Domination, SA = Social Alienation, V = Vindication, JCTSI T = Total of Juvenile Criminal Thinking Styles' Inventory. CI = confidence interval; LL = lower limit; UL = upper limit.

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

Juvenile delinquents who committed nonviolent crimes have more dominating and vindictive thought patterns as compared to juvenile delinquents who committed violent crimes. Nonsignificant difference is found on social alienation. The overall significant mean difference among juvenile delinquents shows that juvenile delinquents who committed nonviolent crimes have more criminal thinking styles as compared to juvenile delinquents who committed violent crimes. The Cohen's effect size value ranges from .19 to .48 signifying a moderate significant mean difference of juvenile delinquents who committed different types of crimes (Table 5).

Discussion

Criminal thinking is considered as a cognitive process that motivates illegal life (Walters & White, 1989) and these styles further influence the expectations that one has of a certain situation by giving a distorted meaning to that situation. According to Kroner and Morgan (2014), criminal thinking styles not only influence complex situations; rather influence noncomplex situations too. Such as, reactions to boredom situations or even encouraging reward.

Juvenile criminal thinking defines as a distorted thought pattern uses by a child in order to support an antisocial behavior. This thought pattern is different from criminal thought pattern of adult delinquents. Juvenile

delinquents have some minor issues related to affection from parents, openness with siblings, and friendliness from peers which turned out to be major in consequences. Nowadays, the criminality of juveniles is a comprehensive concept due to predisposing factors of criminal conducts (Heidensohn, 2006; Rode & Rode, 2011); in fact there are many environmental factors are involved alongside too that play a significant role in invoking criminal activities (Naqvi & Kamal, 2008).

Researchers consider delinquency possibly caused by biological or social factors only, but researchers also determined significant relationships based on psychosocial factors, such as peer victimization and manifestations in children, bullying, social rejection (peer rejection), avoidance, aggression, depression, posttraumatic stress, suicide and violence, conflict, social anxiety and anxiety, lack of social self-concept and self-esteem (e.g., Clearly, 2000; Dake, Price, & Telljohann, 2003; Hanish & Guerra, 2000; Hawker & Boulton, 2000; Irshad, 2017; Khatri & Kupersmidt, 2003; Storch & Esposito, 2003; Storch, Nock, Masia-Warner, & Barlas, 2003).

In the current research, the common criminal thinking styles of juvenile delinquents were explored, collected, gathered, and transformed into a 5-point self report inventory, namely Juvenile Criminal Thinking Styles' Inventory (JCTSI). Principle component factor analysis of JCTSI that consisted of 19 items revealed three factors, namely Domination, Social Alienation, and Vindication.

Factor 1 of JCTSI is consisted of 8 criminal thinking patterns related to domination, meaning children think they have full control and influence over others; also, they can do anything, because they are born for privileges. This style has also been explained in western researches, but in terms of adult delinquents (Knight et al., 2006; Mills & Kroner, 1999; Walters, 1990, 1995a, 1995b, 2002, 2003a, 2006; Yochelson & Samenow, 1976, 1977). This type of criminal thinking has emerged though patterns in which person thinks oneself opinionated, dangerously overconfident, undefeatable, and forceful in comparison of others.

Factor 2 of JCTSI is comprised of 5 criminal thinking patterns related to social alienation. The thought patterns in this factor were related to child's isolation, withdrawal, or dissociation from family, peers, and community. Children when find themselves unimportant, subsequently withdraw from societal culture (Zavaleta, 2007). The items are also consistent with the literature. Results suggested that person requires two aspects for social relations such as quantity and quality (Zavaleta, Samuel, & Mills, 2014); further quality is divided into two factors, first the

relation for expectations and internal evaluation and second the relation for influential values. When these quantity and quality falls down; then, alienation takes And as a result forms distorted thought patterns, such as the person thinks the other person is unhappy with him, people in authority (especially parents) are dissatisfied from him, and he is no more closely associated with other people. At times, an individual wants assertiveness and expects to be treated with the same love and care as other people are getting from their families, but consequentially left with disappointment and estrangement. Thus, parents' experimentation regarding the teenager's variety of interests and friendships can develop an extent of unfamiliarity that did not exist earlier (Pickhardt, 2013). The third factor vindication included 6 criminal thought patterns related to denial of committing anything wrong and justifying one's acts by blaming other person, government and community. When the child is unable to provide enough reasons behind their wrong deeds or enough justifications; then; they start blaming and criticizing others for their crimes (Knight et al., 2006; Walters, 1990; Yochelson & Samenow, 1976, 1977); and consequently twists the thought patterns towards exoneration means freeing oneself from guilt by justifying the wrong deeds, extenuation means giving partial excuses to lessen the seriousness of mistakes, and incrimination means someone is guilty for one's own wrong doings not him. Vindication is not just bound to irrational thoughts related to self, but this involves the law authority figures, family, society, and circumstances of livelihood. In contrast to literature, behavioral patterns motivate one's thought pattern to grow and fight against capsizing situations either it includes law, authority figures, family, or friends (Knight et al., 2006; Walters, 2007), also deny from one's committed offenses, such as in honor killing. These types of thinking traits are inherited from parents. Essentially, vindication and justification had a significant relationship (Sana & Batool, 2017). The psychometric properties of JCTSI were satisfactory and acceptable. The internal consistency of JCTSI was established using Cronbach's Alpha, which ranged from 0.71 to 0.81 with three factors and 19 items after factor analysis. Since, the items of JCTSI were based on the direct thought patterns and expressions of juvenile delinquents and were further validated by experts; therefore, the inventory had satisfactory face and content validity. As far as the concurrent validity was concerned, a significant positive correlation was found between JCTSI, its subscales, and MCSI.

Limitations and Suggestions

JCTSI can efficiently measure criminal thinking styles of

juvenile delinquents. The findings are described in terms of implications of juvenile as a criminal thinking style for correctional and clinical counselling and further interventional approaches related to correctional and clinical counselling. On account of classification of a specific criminal thinking styles, proper punishment along deterrence programs can be planned for juvenile delinquents such as cognitive-behavioral therapy (CBT), 10 week prison-based psycho educational program by using ABA design, and functional behavior assessment (FBA) to predict the risk of recidivism (i.e., reoffend). The JCTSI scales can further be employed for research purpose and to observe the counselling effectiveness through pre-to-post assessment. Since, in Pakistan, limited work has been done on these scales, so a lot of exploration and work is required through projective and indirect approaches along with awareness programs for law authorities, police staff, educational institutions, and most importantly for families.

Furthermore, the sample was comprised of boys (juvenile delinquents), so future studies should endeavor to include girls (juvenile delinquents) from Child Protection Bureaux and Home Care Centers. This research has focused entirely on delinquents from a high security prisons, whereas additional explorations ought to be considered preferable from different categories of detention centers and prisons. Moreover, in order to enhance the overall consistency of the proposed model of juvenile criminal thinking styles, it is

essential to increase the sample size. Further limitations are associated with the administration of rating scales and self-reported measures on juvenile delinquents' population, who normally exhibit poor reading and writing capabilities with short attention span. This study would have been enhanced and strengthened by adding reports of family and peer reports of juvenile's delinquent behavior in order to improve the probability of data accuracy. Moreover, the JCTSI can be essential for more exploration and further research in terms of projective assessment and interventional strategies.

Conclusion

This pioneering research work has been done in order to assess criminal thinking styles among juvenile delinquents. Moreover, this piece of research work will be useful and essential to understand the widespread concept of juveniles' criminal thinking styles by employing Juvenile Criminal Thinking Styles' Inventory (JCTSI).

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Conflict of interest: Author declares no conflict of interest.

Funding disclosure: Nil

Author's contribution:

Fatima Sana; concept, data collection, data analysis, manuscript writing, manuscript review

Muhammad Rafiq; concept, data collection, data analysis, manuscript writing, manuscript review