Pakistan Journal of Psychological Research, 2017, Vol. 32, No. 1, 117-139

Development and Validation of an Indigenous Criminal Thinking Scale

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The current research was aimed at the development and validation of an indigenous scale for assessment of criminal thinking among offenders in Pakistani cultural context. The research has been carried out in two studies. Study I dealt with the development of an Indigenous Criminal Thinking Scale. The items of the scale were empirically validated through content validation and factor analysis on offenders (N = 230). The results indicated that Indigenous Criminal Thinking Scale as an internally consistent five factor scale (Criminal Rationalization, Power Orientation and Justification, Personal Irresponsibility, Vindication, and Entitlement). Study II of the current research was conducted to determine the gender differences on Indigenous Criminal Thinking Scale. The convergent validity was established with the help of Brief Criminal Attitude Scale (Taylor, 1968) and both scales showed Indigenous Criminal Thinking Scale as valid and reliable instrument for measuring criminal thinking. Results concluded that the Indigenous Criminal Thinking Scale is a promising measurement tool in indigenous setting.

Keyword. Development, validation, criminal thinking, offenders, indigenous, reliable

Criminal behavior has become a popular and important discipline of research. Crime is a major topic for public debate and a subject of constant interest. We come across discussion on crime wherever we go. These discussions offer the suggestions as how to deal with the underlying factors of crime. Law enforcing agencies are struggling to manage crime and these agencies are motivated to differentiate the levels and kinds of threat factors that an offender exhibits against the public. The conception is that offenders have varied resources linked to criminal thinking, which are based on criminogenic needs.

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A variety of researches have indicated that environmental factors (e.g., family or peer group factors) and behavioral factors (such as deviant or delinquent activities) play a crucial role, in order to effectively understand the negative outcomes of criminal behavior and criminogenic needs (see Camp & Gaes, 2005; Miller, 2006; Ward & Stewart, 2003). Generally, there are criminogenic needs that characterize an offender's behavior, morals, and approaches and that further motivate an offender to participate in criminal activities (Andrews & Bonta, 2010). Besides, some dynamic risk factors are also involved that measure change in connection to consequent criminal conducts (Andrews & Bonta, 2010; Wooditch, Tang, & Taxman, 2014). The concept of criminal thinking is a distorted form of thought by maintaining and giving explanations about how/why a person perform criminal act. The criminal thinking is factually different from the individual's actuarial risk outcome and it explains values and attitudes that bring up criminal behavior (Bulten, Nijman, & Staak, 2009; Ragatz, Anderson, Fremouw, & Schwartz, 2011; Walters, 2006). There are countless questions about the idea of criminal thinking, particularly as they are linked to a form of illegal behaviors that may or may not include archetypal egocentric defense mechanism or performances (Perri, 2013; Taxman, Rhodes, & Dumenci, 2011).

The main concern is how to define criminal thinking, especially, when the plan is to investigate those elements that can be changed first, and then managed properly to lessen recidivism. Criminal thinking is "a distorted or concentrated thought patterns involving attitudes and values that support a criminal lifestyle by rationalizing and justifying law-breaking behavior" (Taxman et al., 2011, p. 4). In past two decades, numerous instruments have been developed to measure criminal thinking; however, only some have been completely validated (Taxman et al., 2011; Wooditch, Lawton, & Taxman, 2013). Present research is based on the validation and establishing psychometric properties of indigenously developed tool, the Indigenous Criminal Thinking Scale (ICTS), by using sample of Pakistani offenders. The main purpose of this research is to understand how the concept of criminal thinking works in Pakistan and how criminal thinking is a criminogenic need of offenders.

In other developed countries, an actuarial risk outcome for many years has been suggested for understanding the categorization of offenders' tendency to offend. According to Gottfredson and Gottfredson (1986), an actuarial risk outcome has been defined as a measure of possibility of re-offending and an instrument to help correctional organizations in decision making like assignment for

management plans, a release from detention center or prison, and amount of rehabilitation (Gorman-Smith, Tolan, Loeber, & Henry, 1998; Harcourt, 2008; Schmidt, & Witte, 2012). However, cognitive intercessions can be used to show the thought patterns of an offender in alignment with the society of noncriminals (Scott, Grella, Dennis, & Funk, 2014; Tangney et al., 2012; Walters, 2006, 2014; Yang et al., 2013). A number of instruments were developed to classify individual's criminal risks that includes Lifetime Criminality Screening Form (Walters, White, & Denney, 1991). It is a 14-item based scale that measures four dimensions of criminal way of life: Interpersonal intrusiveness, irresponsibility, social rule breaking, and self-indulgence. The other instruments are Level of Service Inventory-Revised (Andrews & Bonta, 1995; Andrews & Bonta, 2001) and Wisconsin Risk Need Tool (Van Voorhis & Brown, 1997). These instruments measure both the criminogenic needs and actuarial risk outcome, but not thinking styles of offenders.

Criminogenic needs and actuarial risk instruments have been found useful in order to predict future recidivism than typical clinical evaluations, because they postdict only the past activities and behaviors of a person (Andrews & Bonta, 2010; Andrews, Bonta, & Wormith, 2006, 2011; Bonta & Andrews, 2007; Hanson & Morton-Bourgon, 2009). Recidivism is the ability to re-offend any antisocial activity for which a person has previously been imprisoned; it is same as the relapse in drug addiction or any other mental illness. Majorly, the actuarial risk usually depends on certified records or a person's recollection of certain memories like total number of arrests, violent or aggressive behavior, and time in prison (Taxman et al., 2011). Further, the clinical assessments have been condemned many times for "labels" instead to help persons by using proper interventions (Craig, Beech, & Browne, 2006; Craig & Hutchinson, 2005; Silver & Miller, 2002). The reason is, these assessments' focus is on simply scoring the person's prior life rather than understanding the reasons behind one's criminal conduct, on contrary actuarial explanations are based on comprehensive data to find and explore norms that some people have thought insignificant at the individual level to deal with particular issues (Freely & Simon, 1992; Garland, 1996; Simon, 2007).

Western researchers assess criminal behavior by referring to four generations of instruments mainly first one is clinical assessment; second is actuarial risk instruments; third is actuarial risk score that tells about psychosocial functioning behind criminal conduct; and fourth includes both clinical and actuarial evaluations (see Andrews et al., 2006). The development of methods to assess criminal risk has

identified that nowadays actuarial risk instruments have some degree of utility, because they only provide information about decisions concerning to incapacitation, program evaluation, and resource provision rather than help to understand the perspectives and factors that influence the individual's probability for more participation in criminal activity (Campbell, French, & Gendreau, 2009; Girad & Wormith, 2004; Simourd, 2004). Moreover, criminogenic needs are equally significant in decision making regarding how to lessen the probability of future recidivism that is re-offense (Andrews & Bonta, 2010). Therefore, criminogenic needs are defined as criminal thinking distortions (Walters, 2003a), as criminals who tend to show more criminal thinking distortions have ability to continue making wrong decisions and these distortions have an effect on their future criminal conduct (Walters, 2006). According to Taxman et al. (2011), to measure the situation of a criminal what one need, desire, and think; valid and suitable tools are required to assess the dimensions of criminal thinking.

Criminal thinking postulates that the persons' involvements in criminal lifestyle are connected to particular thinking modes, which factually holds their criminal actions (Taxman et al., 2011). This further leads to the concept of "criminal personality", which gives attention to a variety of behaviors or attitudes that are usually archetypal, mainly rationalization and justification, but recommends that these are intense or extreme in those individuals who later become offenders (Walters, 2003b). Initially, Yochelson and Samenow (1976) used the idea of criminal personality in a study in which the individuals were interviewed, who found 'not guilty' because of psychological illness (Boduszek & Hyland, 2012) and discovered 54 possible criminal thinking styles and resulting actions (Rodriguez, 2010; Van Voorhis & Salisbury, 2013). The styles were usually thinking patterns that are considered wrong by society's conventional practices and their principles of responsibilities and included the concept of "zero state" in which one's self-esteem is very low; "fear of fear", the idea of being afraid of fear and refuse to accept any irrational fear; "uniqueness", the person considers and views oneself better and deserving than others; "concrete thinking", the unchanging attitude by viewing past actions as accurate and tangible; "power thrust", the desire to gain control over others (Ortiz, 2006; Taxman & Gordon, 2009; Taxman et al., 2011). Yochelson and Samenow (1976) have provided much theoretical foundations for instrumentation work and explored the roots of the criminal thinking 'as approach to change' in the area of psychopathy and criminality.

Walters (1995a) refined the model of criminal thinking as the crime is a way of life based on justifications, support, and rationalization for antisocial activities and that activity is originated from cognitive patterns. By considering the theoretical work of Yochelson and Samenow (1976), Walters developed an influential and significant inventory of criminal thinking styles, which is known as Psychological Inventory of Criminal Thinking Styles (PICTS; Walters 1995b). The fourth version of PICTS is comprised of eighty items, with eight scales of thinking, two scales of validity, four factor scales, a General Thinking Scale, and two composite scales (Walters, 2007a). The PICTS includes the eight thinking styles such as Mollification (justify offending behavior in terms of social injustice), Entitlement (the belief that one is inborn deserving of special freedom or special treatment), Cutoff (quick/rapid removal of unwanted fears and other emotions), Power Orientation (the desire to get the power and wish for the need of supremacy), Cognitive Indolence (solve problems by means of shortcuts), Super Optimism (overconfidence about not being caught), Sentimentality (doing good acts in order to get bad things), and Discontinuity (less follow-through as of little self-control). The factor scales include Interpersonal Hostility, Denial of Harm, Problem Avoidance, and Deception/Self-Assertion, and the two composite scales include the Reactive and Proactive Criminal Thinking (Walters, 2007b). The results have identified that the reliability of PICTS scales is at moderate level among the varied western population of offenders. The validity of the General Criminal Thinking Scale and Cutoff Scale were at a good level in estimating the future recidivism and removing from psychological programs (Walters, 2002). Further, the scales of PICTS validated in western populations for both offenders and nonoffenders showed the association with previous measures of criminal activity (Walters, 2003b). However, the major concern is these measures require culture-wise validation and implementation according to cultural norms.

The Criminal Thinking Scale (CTS) was developed by Knight and his coworkers and it is assembled on the model of PICTS. The CTS is comprised of 37-items with six subscales with three subscales of PICTS such as Entitlement, Mollification (Justification), Personal Irresponsibility (always blame others for one's issues), Criminal Rationalization (pessimistic/negative behavior toward authority figures and law), Cold Heartedness (shortage of emotions in relation to others), and Power Orientation. The preliminary test of this instrument was based on above 3,200 offenders in correctional centers and discovered reliabilities of the scales at moderate level ranging from .68 to .82 (Knight, Garner, Simpson, Morey, & Flynn, 2006).

This research survey also performed a factor analysis of the scales and found a four – factor solution that validate the measure, but they decided to go for a six-factor solution of theoretical and clinical examples, generally to keep the PICTS scales unrelated. Knight et al. (2006) found no connection among the scales and previous or upcoming criminal justice surveys were evaluated at that time. Although, the above mentioned measures are found to have satisfactory and acceptable psychometric properties, but still cross-cultural usage and implementation of these scales could be a problem. For instance, the models of Knight et al. (2006) and Walters (1995a, 1995b, 2001) are based on more clinical instead of psychological expression of criminal thinking styles. Secondly, these models have limited cross-cultural implementation, because of thought patterns related to western culture only.

Assessing the model of criminal thinking in Pakistan is a significant issue. In other countries, many instruments were developed to assess criminal risk and criminogenic needs, but in Pakistan there was no instrument developed before current study that could be used to study underlying reasons of an offense to address how to stop criminal activities of offenders. The literature illustrates some of the scales that measure only clinical problems rather than dealing with recidivism and probability of future criminal behaviors in Pakistan. Development of a valid and reliable measure for Pakistani criminal population is anticipated to be useful having marked utility. Therefore, this study aims at investigating and exploring the psychometric properties of the ICTS, when administered on men and women offenders of Pakistani jails. The objectives of the current study were to:

1. Develop an indigenous scale to assess the criminal thinking among offenders.
2. Determine the psychometric properties that are reliability and validity of ICTS.
3. Investigate the differences between male and female offenders in terms of criminal thinking through ICTS.

Method

The process of development of the scale was carried out in four phases.

Study I: Development of an Indigenous Criminal Thinking Scale (ICTS)

Study I was proposed to develop the ICTS, and consisted of four steps. The first step was intended to generate item pool for scale with

the help of psychologists, literature review, and taking perspectives of nonoffenders by using open-ended questionnaires. The reason to use nonoffenders for item generation was the security issues faced by Jail authorities during initial stages. At the final stage of Study I, experts of relevant subject were asked to select final items. The finalized items were analyzed through factor analysis to establish the factorial structure of final instrument. The details of every step of Study I are as below:

Step I: Item pool generation. The generation of item pool was done with the help of psychologists, literature review, and open-ended questionnaires.

Psychologists. An open-ended questionnaire related to criminal thinking was given to five psychologists (Government College University, Department of Psychology, Lahore), and they were instructed to list at least five sentences/items in Urdu language by considering the operational definition of criminal thinking "As a psychologist, what kind of thought patterns and cognitive perceptions an offender have while committing certain type of crime". At the end, almost 40 items were generated based upon psychologists' reporting.

General population. Further, 10 men and 6 women with age range of 20 to 30 years were included in order to explore phenomenology. In order to gather items from them, an open-ended questionnaire was given with appropriate examples like 'the crimes that result as acts of self - defense are not offences'; 'I am above the law'; society is responsible for my criminal behavior'; and so on. At the end, almost 63 items were collected from general population.

Literature. The accessible literature was evaluated and some secondary items of each dimension of criminal thinking were selected from the available instrument including CTS (Knight et al. 2006), PICTS (Walters, 1995a, 1995b), Measure of Criminal Attitudes and Associates (Mills, Kroner, & Hemmati, 2004), and Criminogenic Thinking Profile (Mitchell & Tafrate, 2011). The list of 20 items from above mentioned scales were given to 3 psychologists and they were asked to select the most appropriate statements. The researcher translated the items so chosen, into Urdu language. These translated items were given to five psychologists (who were well known for their translation technique) to evaluate and assess precisely the translation of the items through back-to-back process.

After generating 123 items, these were grouped according to criminal thinking concepts. A close examination of 123 items showed that some were theoretically overlapping with each other and others

were irrelevant. Therefore, based on groundwork examination, 73 items out of 123 were excluded from the list. At the end, the total 50 items were shortlisted that were given to the judges for evaluation in the next step.

Step II: Expert's evaluation of items. After organizing the item pool of 123 statements for ICTS, it was given to four psychologists (two Ph.D. and two M.Phil. degree holders), one was Civil Service of Pakistan Officer in crime branch, and two were criminologists who had understanding of the research problem in hand. They were asked to classify the items according to their respective dimensions by considering the wording of the items and were asked to abandon the items that appeared to be inappropriate to the construct. According to experts, 12 out of 50 items were denoting the opposite meaning to thought patterns that were essential and appropriate to be discarded and 5 items were needed to be articulated (such as 'I am a selfish person'; I love to put down others'; 'I am a self-centered person'; 'I like to dominate others'; etc.). According to experts' assessment, the overall number of items was decreased to 38 for ICTS. These modified and decreased items were dispersed in six categories including entitlement (8 items), justification (6 items), power orientation, (4) vindication (6 items), criminal rationalization (6 items), and personal irresponsibility (6 items).

Step III: Exploratory factor analysis (EFA). In order to get the final structure for ICTS, EFA was applied.

Sample. A sample of 230 offenders was vigilantly selected to meet up required criteria of research from Punjab Prisons Pakistan. The sample was divided into 178 men and 52 women on the basis of age ranged from 18 to 60 years. The respondents were chosen from the entire categories of offenders and purposive sampling approach was used.

Measure. The item pool of 38 statements was used for data collection. Items were rated on five-point rating scale such as, *Disagree Strongly* (1), *Disagree* (2), *Uncertain* (3), *Agree* (4), and *Strongly Agree* (5). The possible minimum score for 38 items was 38 and maximum score could be 190. Demographic information was also taken with the questionnaire. The high score reflected offender's high criminal thinking and low score indicated low criminal thinking.

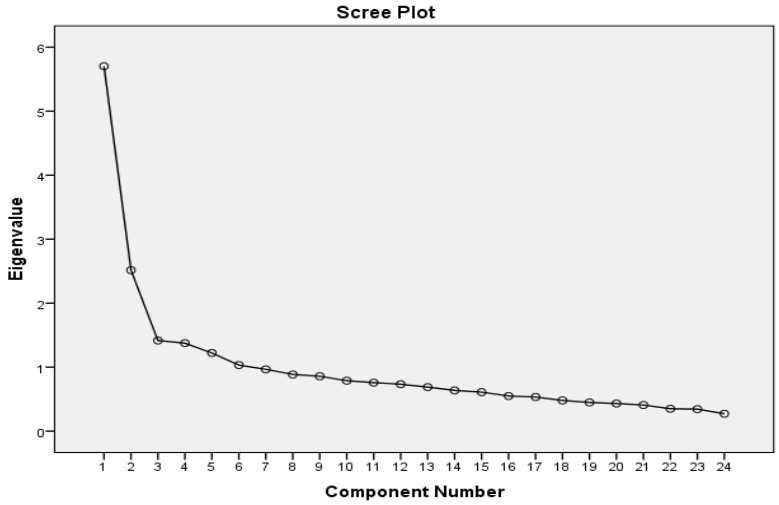
Procedure. The data from participants were collected from jail with the support of jail administration and with the permission of Inspector General (IG) of Prisons, Punjab. The participants who met

the criteria were asked to fill the questionnaire by choosing the suitable option that applies best to their opinion after reading each statement carefully. The participants were ensured about the confidentiality of their responses. They were also acknowledged for their contribution and cooperation.

Results. In order to choose the items for final ICTS, item-total correlation analysis was computed on 38 items; 24 items exhibited significant item-total correlation (see Table 1). The items with less than .20 values were not continued in final structure, also by considering these values, the items were being chosen in their relevant factors. The value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) .83 suggests that the data is suitable for the factor analysis and Barlett's Test of Sphericity (χ^2=1501.38, $p < .001$) shows the positive correlation among the variables.

In order to obtain a best fit model 7, 6, 5, and 4 factor solutions were also tried. Initially, the six factor solution was considered the best, but it had shown lower values of item-total correlation, that was why the five factor solution was found to be best fit with less dubious items and clearly defined structure. Further, the content of dubious items was considered for the appropriate retention of items in their relevant factors.

Figure 1. Scree plot illustrating extraction of factors of ICTS.



The scree plot (Figure 1) is exhibiting factors with Eigen values greater than 1 and suggests five factors to be retained. The scree plot helps in yielding the total number of factors. The Kaiser-Guttmann's

retention criterion of Eigen Values (Kaiser, 1974) was followed and it revealed five factors with Eigen values greater than 1.

Table 1

Factor Structure, Eigen Values, and Item Correlation of 26 items of Indigenous Criminal Thinking Scale with Varimax Rotation (*N* = 230)

S. No	Item No	F I	F II	F III	F IV	F V	*r*
1	16	**.75**	.02	.27	.00	-.00	.33*
2	18	**.72**	-.00	.15	-.04	-.08	.21*
3	8	**.69**	.09	-.13	.08	.22	.28*
4	11	**.64**	.17	-.10	.07	.13	.28*
5	7	**.42**	-.10	.23	.02	.33	.28*
6	25	.20	**.73**	-.13	-.07	-.02	.29*
7	20	-.16	**.54**	.14	.26	.24	.45*
8	28	.24	**.50**	.11	.23	-.08	.39*
9	22	-.18	**.49**	.29	.28	.24	.48*
10	26	.16	**.49**	.12	.10	.19	.43*
11	13	-.14	**.46**	.22	.14	.41	.49*
12	31	.06	-.09	**.71**	.04	.32	.42*
13	2	.22	.13	**.70**	.10	-.06	.43*
14	4	-.01	.50	**.53**	.13	.12	.56*
15	34	-.10	.16	**.53**	.39	.29	.53*
16	3	.38	.33	**.53**	.09	-.08	.49*
17	32	-.06	.40	**.49**	.25	.26	.58*
18	35	.12	.12	.10	**.76**	.10	.43*
19	36	.07	.07	.15	**.71**	.08	.45*
20	38	-.02	.58	.07	**.70**	.21	.36*
21	10	.27	.10	-.00	.13	**.68**	.42*
22	9	-.02	.28	.14	.28	**.56**	.49*
23	14	.13	.35	.23	-.21	**.51**	.41*
24	37	.05	.00	.05	.22	**.50**	.29*
Eigen Value		5.70	2.52	1.42	1.37	1.22	
%Variance		23.76	10.48	5.90	5.73	5.09	
Cumulative%		23.76	34.24	40.14	45.87	50.96	

Note. F I= Factor 1; F II= Factor 2; F III= Factor 3; F IV= Factor 4; F 5= Factor 5; Items with .40 or above are boldfaced in the respective factor. *r* = Item-total correlation .20 or above are significant at **p* < .01.

The items with .40 or above factor loadings were retained in their particular factors and less than .40 were excluded.

By considering the items commonality of theme and relevance according to the each corresponding factor, all fives factors were assigned a label by the researchers.

Factor 1: Criminal Rationalization. The first factor of ICTS comprises of 5 items. A high score on this factor refers to certain negative perspective in relation to authority and law. Example items:

Law is only for the ones who cannot buy it (only for the poor ones); crimes are committed due to social injustice; politicians and leaders frequently play with the law (violate the law), but no one is there to wipe them; unemployment is the mother of corruption; and so on.

Factor 2: Power Orientation and Justification. The second factor of the scale comprises of 6 items. The high score on this factor refers to the wish to get power and control/authority over other individual's and the desire to get the power and wish for the need of supremacy by giving excuses or blaming other sources for committed offense. Example items: I try to exert power over others; at times, we need to twist even the law to catch the outlaws; had I not committed this crime, someone else would have done so; the crimes that result as acts of self - defense are not criminal offences; and so on.

Factor 3: Personal Irresponsibility. It comprises of 6 items. A high score on this factor refers to blaming others for one's problems; a person who holds responsible, condemns, and inculpates others for their difficulties and complications in life; and the one who thinks rules and regulations are not worthy to follow. Example items: I always do what I want to do; even if I turn silver, I will be in the bad books (whatever I do, people only think I am wrong); I am delinquent (guilty) because of my circumstances; others drilled (forced) me to violate law; and so on.

Factor 4: Vindication. It comprises of 3 items. A high score on this subscale refers to a person who denies, justifies, and censures his mistakes and considers circumstances as responsible. Example items: I often face consequences due to my friends; if you are born poor, it is not your fault, but if you die poor it is your fault; and so on.

Factor 5: Entitlement. It comprises 4 items. A high score on this subscale refers to the belief that one is inborn deserving of special freedom or special treatment and others are not worthy and deserving. Example items: I am a self-centered person; if I ought to rule, it will be a better place to live; people like me deserve amnesty (liberty); it is the responsibility of the society to give me a better life; and so on.

Table 2

Cronbach Alpha and Correlation between Total and Subscales of ICTS (N = 230)

Factor	*k*	α	1	2	3	4	5	6
1. CR	5	.72	-	.17**	.26**	.15*	.27**	.50**
2. POJU	6	.68		-	.58**	.44**	.50**	.80**
3. PI	6	.77			-	.43**	.46**	.83**
4. VI	3	.66				-	.36**	.63**
5. EN	4	.58					-	.71**
6. ICTS T	24	.86						-

Note. *k* = No. of items; α = Cronbach Alpha; CR = Criminal Rationalization; POJU = Power Orientation and Justification; PI = Personal Irresponsibility; VI = Vindication; EN = Entitlement; ICTS T = Total of Indigenous Criminal Thinking Scale.
*$p < .05$. **$p < .01$.

As shown in Table 2, Cronbach's alpha co-efficient range from .72 to .58 for Criminal Rationalization to Entitlement, respectively. While, the alpha reliability of Entitlement subscale is below satisfactory as compared to other four subscales, however, according to George and Mallery (2006) minimum acceptable alpha value is .50. The overall alpha reliability of total ICTS is satisfactory. Inter-correlation among all the subscales was significant. All subscales are positive and significantly correlated with each other. Total score on ICTS is positive and significantly correlated with all subscales.

Study II: Convergent Validity of ICTS and Gender Differences

Study II was aimed at further validation of ICTS through convergent validity of ICTS and gender differences were explored.

Sample. An independent sample of 151 offenders was divided after the collection of data into 114 men and 37 women; age ranged from 18 to 60 years. The respondents were chosen from the entire categories of offenders from Punjab Prisons Pakistan and purposive sampling approach was used.

Instruments. Following instruments were used in this part of the study:

Indigenous Criminal Thinking Scale (ICTS). It was developed in the current study having 24-item to measure criminal thinking with five factors, which were assembled on the model of Criminal Thinking Scales (CTS; Knight et al., 2006). It is a five-point rating scale from *disagree strongly* (1)*, disagree* (2), *uncertain* (3), *agree*

(4), and *agree strongly* (5). The final score ranged from minimum 24 to maximum 120. The high score reflected offender's high criminal thinking and low score indicated low criminal thinking.

Brief Criminal Attitude Scale (BCAS). It was developed by Taylor (1968) to measure criminality among offenders. It was translated into Urdu. The reason to use this scale was that it was quite brief keeping in mind the feasibility and convenience for the participants of the study. The BCAS included 15 items with two response categories *true* or *false*. The score ranged from 0-15. The reliability of BCAS was satisfactorily high that is, .86 and .65 for men and women, respectively (Taylor, 1968). BCAS is adequately applicable for evaluating the level of criminality and it can be applied in categorization processes, clinical practices, or in research.

Procedure. The data were collected from jail with the support of jail administration and with the permission of Inspector General (IG) of Prisons, Punjab. The participants who were suitable for the criteria were asked to fill the questionnaires by choosing the suitable option after reading each statement. The participants were ensured about the confidentiality of their responses. They were also acknowledged for their contribution and cooperation.

Results. For gender differences, independent sample *t*-test was computed and for convergent validity of ICTS with BCAS, Pearson Product Moment Correlation was computed.

Table 3 shows gender differences on ICTS.

Table 3

Difference between Men and Women on ICTS and its Subscales (N = 151)

	Men (n = 114)	Women (n = 37)		95% CI		*Cohen's d*
Factor	*M(SD)*	*M(SD)*	*t*(149)	LL	UL	
CR	19.97(3.91)	20.68(3.70)	.96	-2.15	.74	.19
POJU	19.76(5.05)	18.84(4.07)	1.01	-.88	2.73	.20
PI	18.92(6.14)	17.78(5.39)	1.01	-1.09	3.37	.20
VI	10.23(3.10)	8.62(2.60)	2.84*	.49	2.72	.56
EN	13.72(3.58)	13.51(3.28)	.31	-1.10	1.52	.06
ICTS T	82.61(15.90)	79.43(12.75)	1.10	-2.51	8.85	.22

Note. CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit; CR = Criminal Rationalization; POJU = Power orientation and Justification; PI = Personal Irresponsibility; VI = Vindication; EN = Entitlement; ICTS T = Total of Indigenous Criminal Thinking Scale.

*$p < .05$.

As shown in Table 3, difference between men and women on ICTS and its subscales. The results suggest a significant mean difference between men and women on the Vindication subscale; men vindicate their committed crimes more as compared to women. On other subscales and overall ICTS nonsignificant gender differences are found.

In order to find out the convergent validity of the ICTS, Pearson Product Moment Correlation was computed to determine the correlation among the subscales of ICTS and BCAS.

Table 4
Correlation between ICTS and BCAS (N= 151)

Subscale	BCAS
1. CR	.14
2. POJU	.16*
3. PI	.20*
4. VI	.16*
5. EN	.20*
6. ICTS T	.25**

Note. BCAS = Brief Criminal Attitude Scale; CR = Criminal Rationalization; POJU = Power orientation and Justification; PI = Personal Irresponsibility; VI = Vindication; EN = Entitlement; ICTS T = Total of Indigenous Criminal Thinking Scale.
*$p < .05$. **$p < .01$.

Table 4 shows positive and significant correlation of BCAS with four subscales of ICTS including Power Orientation and Justification, Personal Irresponsibility, Vindication, and Entitlement, except Criminal Rationalization. The overall score on ICTS was also positively and significantly correlated with BCAS.

Discussion

The indigenous instrument to assess criminal thinking styles practiced by Pakistani offenders was developed and validated in two studies. The items were generated empirically for the scale and the EFA was computed to determine the construct validity. Five meaningful factors emerged as a resultant of Varimax rotation method, as according to Kaiser (1974), Varimax rotation method is the easiest method that assists in the prediction of the accuracy and precise understanding of every factor. Hence, the reliability co-efficient of all the five factors of the ICTS showed satisfactory internal consistency and each factor was significantly correlated to each other (see Table 2).

The subscales of ICTS consisted of Criminal Rationalization, which refers to pessimistic/negative behavior of a person towards authority figures and law (Knight et al., 2006). Power Orientation refers to the desire to get the power and wish for the need of supremacy (Walter, 2007a). Personal Irresponsibility refers to a person who always blames others for his own issues (Knight et al., 2006). Vindication refers to the personality of a person who denies, justifies, and censures his mistakes and considers circumstances as responsible. Entitlement refers to the belief that one is inborn deserving of special freedom or special treatment; and Justification refers to a person who justify offending behavior in terms of social injustice (Walters, 2007a).

The first factor Criminal Rationalization refers to pessimistic/ negative behavior of a person towards authority figures and law (Knight et al., 2006). It defines those criminals who consider authority and law figures being responsible for their antisocial activities. They think that no one is there to ask these authorities about their acts. In Pakistan, this type of criminal thinking patterns are very common these days. Every news channel and magazine has headlines and blogs filled with these types of issues that boost criminal activity. The results of the present research show a significant relationship between Justification and Vindication (see Table 2). It depicts that criminals usually use justification thinking style to give reasons about offending behavior by targeting or pointing out other issues in society rather than accepting their own faults and this criminal rationalization further leads to chance of recidivism (re-offend) (Taxman et al., 2011).

The second factor Power orientation and Justification is a mixture of various strong negative traits such as supremacy, dominance, superiority, lead, authority, etc. that eventually lead to rationalization and excuse. Power Orientation refers to the desire to get the power and wish for the need of supremacy (Walter, 2007a). Power Orientation and Justification subscale shows a significant correlation with Criminal Rationalization (see Table 2). This shows that criminals, who are authoritative and dominative to others, give justifications and reasons to validate their inappropriate behavior. Further, these offenders often justify their criminal acts by making emotional excuses or by creating a secure environment around them. In fact, criminal thinking trait itself affects the possibilities that one has to deal with the complex circumstances, and when a complex circumstance arises, the criminal thinking trait persuades the reaction (Kroner & Morgan, 2014; Mitchell, Tafrate, Hogan, & Olver, 2013). As a result, the complex situation empowers the offenders to control others by exerting power on them.

Mainly, justification refers to proving one to be upright or righteous and considering crimes as acts of self-defense not as criminal offences. Again, this is an act of showing power by justifying their offenses in terms of self-defense, honor killing, unemployment, poverty, etc. However, these reasons do not lower down their punishment or period of imprisonment. In Pakistani context, mostly criminals accept their wrong deeds, but justify and deny it by saying that if I had not done this, someone else would have done or sometimes use religion as a justification tool. Generally, offenders view themselves as conservative and conformist instead of offensive and majority of offenders try to vindicate and justify their offenses (Boduszek & Hyland, 2012; Osgood, Wilson, O'malley, Bachman, & Johnston, 1996; Simourd, Olver, & Brandenburg, 2015; Sykes & Matza, 1957). Accordingly, most of the criminal thinking traits are based on cognitive processes that motivate the criminals (Walters & White, 1989) and these cognitive processes are based on the typical mechanism of denial, which criminals often use to rationalize their offenses (Boduszek & Hyland, 2012; Sykes & Matza, 1957). Moreover, these thinking patterns also play a significant role in continuation of criminal actions (Benson, Madensen, & Eck, 2009; Boduszek & Hyland, 2012; Maruna & Copes, 2005; Maruna & Mann, 2006). Therefore, that is the reason these patterns are nearly working together, but with different meanings and purposes.

The Personal Irresponsibility (third factor) is the opposite of personal responsibility, where individual blames, feels responsible, and condemns his own self for any wrong act, but in case of offenders they consider others wrong and condemn others instead of accepting their antisocial activities. It refers to a person who always blames others for his own issues (Knight et al., 2006). The results show that criminals who use personal irresponsibility style are actually justifying and validating their acts in order to prove themselves as not guilty or innocent. On contrary, Vindication (fourth factor) refers to a thinking pattern in which one denies, justifies, and censures his/her mistakes and considers circumstances as responsible. High level of criminal denial and justification is a trait of vindication. Offenders usually reassure their antisocial behavior in terms of denial. Further, the correlation between vindication, and personal (Walters, 2007a) irresponsibility shows that criminals justify and deny their acts by blaming and condemning others. They are usually in denial phase or one can say that they have low self-esteem and resilience to accept mistakes and move on in life; maybe that is the reason of their re-offense.

The fifth factor Entitlement refers to the belief that one is inborn deserving of special freedom or special treatment and others are not worthy and deserving (Walters, 2007a). The high score on this subscale shows that the person is self-centered, self-interested, extra-worthy, etc. The results show a significant correlation between Entitlement and all other factors of ICTS (see Table 3). The entitlement attitude was highlighted in many theoretical models of criminal thinking that gives a glimpse of reasons regarding why people commit crimes (Boduszek & Hyland, 2012). Entitlement is a feature of cognition that "tells them they have a right to take whatever they want from whoever has what they desire" (Boduszek & Hyland, 2012, p. 30; Walters & White, 1989, p.4). Researches identify that entitlement is one of those cognitions that are strongly linked with first time of arrest and first time of imprisonment (Boduszek & Hyland, 2012; Walters, 1995a).

The ICTS is shown to have a satisfactory internal consistency and acceptable level of convergent validity. The association between criminal thinking scale and other scale of criminality are consistent with literature (Knight et al., 2006; Walters, 1995a, 1995b, 2001; Taylor, 1968) indicating that those offenders have distorted thought patterns tend to have more perceptual ambiguity. Moreover, another finding opposite to literature (Knight et al., 2006) is that nonsignificant difference was suggested by results between men and women offenders on overall criminal thinking scale. However, only on Vindication subscale men offenders were found to be more justifying as compared to women offenders. Moreover, in terms of women offenders no significant mean difference was found; this is maybe because women offenders vary in terms of criminal risk that includes family history and mental health as compared to male offenders (Holtfreter & Cupp, 2007; Taxman et al., 2011).

A research on criminal risk tools identifies that influential scale should be independently modeled for men and women, given the different results for women offenders that relates to women's lesser rates of recidivism, reduced tendency for violent crimes, and little participation in conventional criminal actions (Austin, 2006; Farrington, Loeber, & Howell, 2012; Taxman & Gordon, 2009); however, in current study, overall nonsignificant mean difference was found in terms of gender. This suggests that existing criminal thinking instruments may not be sufficient enough to discriminate thinking patterns of men and women or they may think in similar way while committing any crime. In fact, interventionists have discovered many other areas of thinking distortions, which are appropriate to female offenders such as apprehensions about rejection, self-esteem, and

approach and authority (Taxman & Gordon, 2009; Taxman et al., 2011). Essentially, the existing literature on criminal thinking and the outcomes of current study, propose that much attention is required in order to develop measuring tools that can assess different thought processes related to criminal behavior.

Limitations and Suggestions

The outcomes of the current research are helpful and essential for psychologists working in law enforcing agencies, jail authorities, and judiciary. ICTS can work more effectively for the welfare of Pakistani offenders. On the basis of criminal thinking traits, management skills can be considered for offenders like anger control training, social skills training, moral reasoning, relapse prevention, and facilitator training. Further, the scale can be helpful in examining the effectiveness of counseling in order to prevent recidivism (re-offend). Since, this study was found to be direct self-reported measure of expression and experience, it might be suggested that further exploration should be done in order to get clearer outcomes and results through projective and indirect approach. Future research ought to be focused on the early experiences of an offender, relationship with family and friends, and interaction with criminal peers.

Conclusion

The current research is a pioneering work to assess criminal thinking in Pakistani adult offenders. This research will assist in more and better understanding of the multifaceted concept of criminal thinking.

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Received February 19, 2016

Revision received June 20, 2017