VALIDATION OF THE URDU VERSION OF METACOGNITIVE QUESTIONNAIRE IN PAKISTAN

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Declaration

I, Anum Wahid, Roll No. F2017238004, from University of Management and Technology, Lahore, do hereby solemnly declare that the work submitted in this thesis entitled “Validation of the Urdu version of Meta-cognition Questionnaire in Pakistan” is my own work. This work has been completed at the School of Social Sciences and Humanity, University of Management and Technology, Lahore and has not been printed, published and submitted as research work, thesis or publication in any form, in any university or research institution, either in Pakistan or abroad.

Dated: _____ _____

Signature of Deponent

Anum Wahid

Research Completion Certificate

It is certified that Miss Anum Wahid worked under my supervision. Her research project on "Validation of the Urdu version of Meta-cognition Questionnaire in Pakistan" has been approved for submission in its present form, as a requirement for fulfillment of the Masters in Philosophy of Psychology Degree in Applied Psychology.

_____ _____

Date Prof. Dr. Rukhsana Kausar

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Anum Wahid

Table of Contents

Contents **Page No.**

Chapter I

Introduction

Contents **Page No.**

Contents **Page No.**

Contents **Page No.**

List of tables

List of Figures

List of Appendices

List of Symbols

M	Arithmetic Mean
SD	Standard Deviation
SE	Standard Error
$\chi 2$	Chi-Square
df	Degree of Freedom
RMSEA	Root Mean Square Error of Approximation
CFI	Comparative Fit Index
TLI	Tucker-Lewis fit index
GFI	Goodness of Fit index
RMR	Root Mean Square Residual
p	Significance
d	Cohen's measure of sample effect size
k	No. of items
%	Percentage
n	Sub-sample
f	Frequency

List of Abbreviations

MCT	Meta-cognition Theory
CAS	Cognitive Attentional Syndrome
S-REF	Self-Regulatory Executive Function
GAD	Generalized Anxiety Disorder
CFA	Confirmatory Factor Analysis
EFA	Exploratory Factor Analysis
PWB	Psychological Well-being
SAD	Separation Anxiety Disorder
SAD	Social Anxiety Disorder
BAI	Beck Anxiety Inventory
PSWQ	The Penn State Worry Questionnaire
NACs	Non- Anxious Controls
PWB	Positive Well-being
NWB	Negative Well-being
ENE	Energy
GWB	General Well-being
WHO	World Health Organization
DSM-V	Diagnostic and Statistical Manual of Mental Disorders
AnTI	Anxious Thought Inventory
PBRS	Positive Beliefs About Rumination Scale
MCQ	Metacognition Questionnaire
WBQ	Well-being Questionnaire

MAI	Metacognition awareness Inventory
TCQ	Thought Control Questionnaire
ANOVA	Analysis of Variance
LSD	Least Significance Difference
ToM	Theory of Mind
UMT	University of Management and Technology

Abstract

Metacognition is a unique perception related to cognition that has been explored in current years. It is a higher-order thinking structure, which includes knowledge and a person's self-awareness of his/her cognitive functions and facts controlled by his/her metacognitive abilities. The present study aimed to examine psychometric properties of the Metacognition Questionnaire (MCQ; Chohan & Kausar, 2015; Urdu version), to validate MCQ with Pakistani population by employing Confirmatory Factor Analyses (CFA). Well-being Scale (Bradley, 1996) and Anxious Thoughts Inventory (Wells, 1994) were used to examine divergent and convergent validity of MCQ respectively. The sample consisted of 503 undergraduate and post-graduate students recruited from different public and private Universities located in Lahore. They ranged in ages from 18-40 years (M= 22.7, SD= 2.9). Factor structure emerged after CFA of MCQ-30 Urdu version was comparable with that of English version of MCQ-30 and the scale showed good internal consistency (ranging from .68 -.75). Convergent and Divergent validity as also examined using Pearson Correlation analysis. The results suggest that MCQ-30 Urdu version is a reliable and valid measure for use with the Pakistani population. Results also revealed metacognition a significant predictor of worry related thoughts.

Key words: Metacognition Questionnaire, Metacognitive beliefs, Meta-worry, anxious thoughts, Convergent Validity, Divergent Validity.

Chapter I

The present study aimed to explore psychometric properties of metacognition and it's validation with Pakistani population. For convergent validity Well-being Questionnaire (WB-Q12) and for divergent validity Anxious Thoughts Inventory (AnTI) was used. The below given section is going to give an overview of Validation of Metacognition Questionnaire MCQ-30 and also a brief description of the constructs used for establishing divergent and convergent validity.

The Metacognitive Questionnaire (MCQ-30) measures individual differences in a selection of metacognitive beliefs, judgments and monitoring metacognitive tendencies. Cartwright Hatton and Wells (1997) created the 65-item Metacognition Questionnaire (MCQ) to assess metacognitive beliefs in adults but routine use of MCQ was prohibited because of its length. Cartwright Hatton and Wells (2004) developed a 30-item short form of the MCQ (i.e., the MCQ-30). Like the MCQ items, the MCQ-30 items are rated using a 4-point ordered-category scale ranging from 1 (*do not agree*) to 4 (*agree very much*). Cartwright Hatton and Wells (2004) found that the MCQ-30 asses the same metacognitive beliefs as the MCQ: (a) positive beliefs about worry (e.g., "worrying helps solve problems"); (b) negative beliefs about uncontrollability and danger of worry (e.g., "worrying can make me sick"); (c) cognitive confidence (e.g., "I do not trust my memory"); (d) need for control (e.g., "I should control the thoughts all the time"); and (e) cognitive self-consciousness (e.g., "I am constantly aware of my thinking"). The MCQ-30 scales showed good internal consistency (Cronbach's αs ranging from .72 to .93), satisfactory test-retest reliability (ranging from .59 to .87 after a month), and medium-to-

high correlations (ranging from .25 to .73) with indices of anxiety (Cartwright Hatton & Wells 2004).

The scale has been translated in various other languages that are; Spanish, Italian, Serbian, Turkish and Urdu. MCQ-30 was first translated in Turkish language to validate it and use it with Turkish population (Toushan & Irak, 2008). It was also translated in Spanish language (Cejudo, Salguero & Vindel, 2013) and in Italian language. Chohan and Kausar (2015) translated it in Urdu language and they also examined internal consistency of questionnaire (α= .85) and its sub-scales ((ranging from .63 to .75).

1.1. Metacognitive Beliefs

Thinking can be defined as a higher functional structure that comprises of numerous diverse intellectual processing, its functioning and construction (Irak, 2011). Metacognition is a unique perception related to cognition that has reconnoitered in current years. It is also defined as a high-order thinking framework, which includes learning and processing that controls, perform and observe cognition and thinking patterns. Self-awareness of a person and their cognitive functioning facts are controlled by their metacognitive abilities (Dienes & Perner, 1999).

Metacognitive dysfunctions lead to inefficient thought processes as well as dysfunctional coping strategies, which may cause different psychological disorders (Cartwright-Hatton & Wells, 1997). People who have several negative as well as positive beliefs about their thoughts will be directly affected by the appraisal of their understanding. Distorted cognitions and beliefs regarding cognitions are associated with dysfunctional set of responses (Gwilliam, et al., 2004 & Cartwright-Hatton & Wells, 1997).

Metacognition is also described as beliefs about thoughts because they are considered to stimulate different thought processes by observing, controlling and assigning some meaning to thoughts. It also explains the psychological processes that are involved in the way a person controls, alters and evaluates his own thoughts. Maladaptive or dysfunctional metacognitions have been linked to the progression and preservation of different psychological sickness (Wells, 2009). Metacognition can also be described as awareness and instruction of one's cognitive activities in learning capabilities (Afflerbach, Veenman & Van Hout-Wolters, 2006).

Metacognition is defined as beliefs about cognition. Actually it is not only based on act but also on how people assess themselves in general, that is linked with their theories about how memory works, what they remember from past appraisals and how they evaluate their effectiveness. Metacognitions also describe as the information, dogmas and higher intellectual processes that involve observing, control and evaluation of thoughts. The metacognitive model explains that emotional anguish is preserved by dysfunctional thinking and extended patterns of emotional distress (such as insistent anxiety or contemplation) that are triggered by casual metacognitive beliefs (Klusmann, Evers, Schwarzer & Heuser, 2011).

1.1.1 Aspects of metacognition

Metacognitions are categorized into three facets such as knowledge, belief systems and experiences.

1.1.1.1 Metacognitive Knowledge

Knowledge pertaining metacognitions denotes to the notion, beliefs and theories an individual has about one's own thinking paradigms. This knowledge encompasses beliefs about different thought processes and also about a person's inhibition of memory and attentiveness. Metacognitive knowledge is categorically divided into two different types: explicit knowledge and implicit knowledge. Verbally expressed knowledge, as in mental challenge, such as "Worrying is treacherous and irrepressible" is referred to as explicit knowledge. Whereas implicit knowledge usually cannot be conveyed by words itself. Rather, it explains as guidelines that monitor a person's thinking patterns (Kleinbichler, 2013). Further two domains are originated along with these two kinds of metacognitive knowledge which are: positive and negative thinking processes. Beliefs that are positive set the interests of involving in cognitive activities which may refer to unsuccessful coping approaches, such as rumination (Wells, 2009). Negative thinking beliefs are associated with the lack of controllability, dangerousness, significance and negative interpretation of thoughts processes (Wells, 2009; Kleinbichler, 2013).

1.1.1.2 Metacognitive experiences

Metacognitive experiences are co-related with the emotions and circumstantial evaluations individuals possess of their mental status (Wells, 2009). Metacognitive experiences include the following; individual feelings such as the slip of the tongue effect and evaluations or judgments of the meaning of specific mental processes or situational actions. In a different term, metacognitive experiences are also defined as a mind full interpretation and labeling of intellectual experiences (Wells, 2009; Kleinbichler, 2013).

1.1.1.3 Metacognitive strategies

Metacognitive approaches are particular responses that are executed to regulate and change thinking with being cognitive and emotional self-regulation process. A strategy is to be carefully chosen depending upon metal activities that are adapted, build up or inhibited. Dysfunctional negative emotions or thoughts are altered by cognitive processes that are aimed by a numerous strategies, whereas other strategies tend to employ disruption, positive thinking and suppression. In psychopathology, the individuals applying these tactics usually try to manipulate the nature of their thinking patterns and to get the desired results. These include suppression, anticipation, rumination and forecasting the forthcoming. Unfortunately, these strategies have proved themselves successful in the long term results (Wells, 2009).

1.1.1.4 Metacognitive Regulation

An individual's monitoring and controlling their cognitive processes is defined as metacognitive regulation. For instance, realizing that considering an approach, a learner tries to figure out a problem does not works and then trying for another different pathway (Nelson & Narens, 1990). It further comprises of two levels: i) "Object level" and ii) "Meta level". It is a responsive level where the mental processes or 'one's own thinking' occurs and inhibits. It can be done as decoding text when reading. Cognitive strategies help the individual to attain a particular goal at objective level.

The Meta level starts from an individual's 'to think about one's own thinking' happens accordingly. The metacognitive approach is used at a higher-order level to make sure that the individual achieves their objectives they have a target on. This ensures that how well an individual have comprehended the passage initially read. This phenomenon

is known as *monitoring*, assuming that the person is satisfied with the comprehension level the individual will keep on reading a passage and by chance if the person will again read the paragraph to comprehend it in a better way or can consult a dictionary. The action will be referred as *control* processes because on a whole it is changing the dimension of an individual's mental processes and their relative responses established upon on the monitoring response (Garner & Alexander, 1989).

1.1.2 Domains of Metacognition

One's control on their cognitive thinking and knowledge invoke to metacognition. Metacognition needs focused leaning, self-assessment and higher thinking processes (Helstrup & Koriat, 2007).

1.1.2.1 Positive beliefs about worry

Positive beliefs are also called as a positive view about sheer worry for an individual that considers worrying about something is a beneficial thinking style and it assists the person to evade from hostile conditions or to solve the problems immediately. Positive beliefs about worry also contain items that analyze the degree where person rely on that worrying in an essential trait of an average person (Cartwright-Hatton, Wells, 19977 & Mc Dermott, 2015).

1.1.2.2 Negative beliefs about worry

Confidence that produce negativity about not being able to restrict the thoughts and threat of concern are defined as the negative thinking about worry, which person rely on that the worry or a perseverative thinking style are not controlled and are mental and

physical risks for the person. Person who scores well on this aspect believes that as a requirement to perform high as an individual is to be able to regulate concerned related thoughts and fears (Davenport, Rushford, Soon, & Mc Dermott, 2015).

1.1.2.3 Need to control thoughts

A need for control refers to an extent based on which an individual depends upon the thoughts that negative outcome will take place if a thinking pattern is uncontrolled; thus, definite thought processes needs to be repressed. Individuals who scores high portrays overall negative concerns about cognitive processes and irrational beliefs (Cartwright Hatton & Wells, 1997).

1.1.2.4 Cognitive confidence

Cognitive self-confidence is defined as somebody having confidence in one's own thinking patterns & abilities that is thoughtful functioning, memory, and reality monitoring (Cartwright Hatton & Wells, 1997 as cited in Davenport, Rushford, Soon, & Mc Dermott, 2015).

1.1.2.5 Cognitive self- consciousness

Cognitive self-consciousness is defined as an individual's ability to observe thought patterns and concentrate on inner thinking processes (Cartwright Hatton & Wells, 1997 as cited in Davenport, Rushford, Soon, & Mc Dermott, 2015).

1.2 Theory of Metacognition

1.2.1 Metacognition theory (MCT)

Meta-cognition Theory (MCT) did not focus on the content of thoughts as it targets they style of thinking, such as worry and rumination (Wells, 2009). This

viewpoint contrasts with the cognitive-behavioral opinion where particular thought content is confronted (Grant, Young & Derubeis, 2007). In the metacognitive view of pathological processes the construct of metacognition is thought to be the cornerstone (Wells, 2009).

Metacognitive theory explains that an intransigent and maladaptive reaction to cognitive event cause the psychological disorders (Wells, 2009). Cognitive Attentional Syndrome (CAS) is the response being called out in this paradigm. It mainly comprises of maladaptive responses such as constant concerns about something and rumination, monitoring risk and unsuccessful coping strategies that had a vital role in the maintenance of the problem. Everyone experiences the feelings of unhappiness, anger, anxiety or worthless more or less often in their daily routines but as in response they isolate themselves. The CAS blocks the understanding of a person undergoing a psychological trauma into a constant repeating measures and extended array of destructive thinking patterns or sensations. Therefore, a person feels more agitated, angry, depressed and unworthy of doing anything permanently. The CAS is driven by core mindset about reasoning which are divided into two types such as positive beliefs (e.g. constant uneasiness to deal with troubles) and negative beliefs (e.g. treacherous thoughts). Metacognition guides thought processes like CAS and can be divided into beliefs, experiences and strategies (Wells, 2009).

1.3 Underlying metacognitive model

1.3.1 The Self-Regulatory Executive Function (S-REF)

Metacognition theoretical approach is grounded on the SREF model (Self-Regulatory Executive Function) where undesirable negative emotions arise from the

cognitive attention syndrome activity, and in healthy controls this activity is brief (Wells, 2009). Previous descriptions of cognitive thinking of psychiatric dysfunctional ties have emphasized on the thought processes relatively than on the process of thinking about thoughts. Psychopathology targets the problems related to dysfunctional beliefs and negative though processes. Whereas cognitive therapy and schema theory explain people's thinking content, thinking patterns and though styles are not justifies by the theories. Metacognitive dysfunction depends upon the self- regulatory model (Matthews & Wells, 1994). It also emphasizes about the cognitive processes are scattered among three interactional phases such as low level processing, cognitive style and the meta-system (Kleinbichler, 2013).

The part of cognitive process such as lower level processing is an involuntary and instinctive process. This stimulates the driven forces and prevails at the outer context of conscious awareness, occasionally reaching into consciousness. Cognitive style is the control of person's thought processes, activities and actual evaluation of cognitions. It depends upon the thoughtfulness of mind to execute cognitive thinking patterns and this processing is mostly voluntary in action: the individual keeps the track of this higher order functioning of mind and is fully aware of its processing. Psychopathology may also interlace out the conscious awareness. The meta-system cannot function independently and is crucial for the metacognitive processing. Meta-system monitors the cognitive level that depends upon self-knowledge can be described as an accumulation of metacognitions, i.e. self-knowledge preserved in long term memory. Cognitive processing is analyzed by the meta-system towards one's goal of a fully aware activated strategy (Kleinbichler, 2013).

The goal of meta-cognitive treatment is to eradicate the CAS and to facilitate novel learning (Wells & Matthews, 1994). Metacognition in relation to feelings and emotions, in specific beliefs regarding emotions, are most frequently explained in relation to their influence on or contribution with emotional regulation. Moreover, metacognitive knowledge about feelings and emotions may also define such strategies and can be important to regulate emotions. Dysfunctional metacognitions have a link with emotions because dysfunctional meta-emotions affect/influence the metacognitions (Manser, Cooper & Trefusis, 2012).

1.3.2 Meta-emotions (Beliefs about emotions)

Meta-emotions are the beliefs regarding unacceptability of facing negative emotions and the adverse outcomes of venting such types of emotions. These emotions are mostly seen and reported in those individuals who are suffering from the variety of different problems, such as; chronic fatigue syndrome, irritable bowel syndrome, somatization disorder, eating disorders, social phobia, depression, posttraumatic stress disorder and borderline personality disorder. It is observed that these beliefs are mostly developing in those people who have experienced such environment where the description of problem and negative feelings were encountered with absence of sympathy or punishment (Rimes & Chalder, 2010).

Cognitive behavioral model suggests that the people's belief regarding unacceptability of facing and venting out negative thoughts and emotions plays a very crucial part in the growth and preservation of clinical and psychological problems and it can ultimately leads to poorer prognosis and poorer treatment results. These beliefs can add to problems in a variety of ways. For example, such beliefs can cause undesirable

feelings that are being overlooked, that can slow down the growth of self-awareness and self-understanding in the person and therefore, also the ability to take care of oneself properly. If some thoughts that are emotionally distressing are repressed actively, then this is possible to have a counterproductive outcome, because there is a significant proof that such repressed feelings can lead to the maintenance of distress. It is also recommended that those people who are emotionally susceptible, preventing their emotions can add to feelings of emptiness, numbness, or a lack of sense of identity. Moreover, considering that it is inappropriate to venting out feelings is also possible to create the interpersonal problems, such as, by causing interpersonal problems to remain unsolved (Rimes & Chalder 2010).

If a person believes that their expression regarding distress or emotion will be assessed in negative way by other people that a person will try to avoid from these feared consequences by seeking the safety behaviors that can unintentionally maintain the negative beliefs and distress. For example, those individuals who remain worried about looking anxious they can practice and use those tactics that help them to suppress their feelings of anxiety like avoiding eye contact, speak very little or learn speech by over-rehearsing, that in actual rise their social anxiety and ultimately weaken their social performance. It is also observed that when people are feeling depressed they try to suppress there depressed feelings and low mood from the other people by using the tactics i.e. avoiding social interaction, but in reality they are decreasing the opportunity for the positive reinforcement and due to missing this chance it cause the lower mood and passivity in the individual (Rimes & Chadler, 2010).

According to the cognitive behavioral models of medically explained symptoms, it has been recommended that those people who hold the beliefs that negative emotions are unacceptable, they mostly try to suppress their negative emotions and not seek for help, which ultimately leads to the feeling of distress and cause mental and physical problems like fatigue, memory/concentration problem and many more. Cognitive attentional syndrome is thought to be triggered by unhelpful appraisals of cognitive beliefs (Wells, 2009). Such evaluations of cognition and beliefs (metacognitions) have been revealed to produce maladaptive coping strategies that comprise of health behaviors like smoking and use of alcohol (Spada, Nikcevic, Moneta & Wells, 2007).

As metacognition is thinking beyond thinking that makes us belief in generating various positive and negative thoughts. Controlling those thoughts depends upon the individual's metacognitive skills to handle thoughts that are related to worry which affects the well-being of a person. Metacognition plays a crucial part in attributing an individual's well-being. To see how meta-cognition affects an individual's wellbeing positively or negatively we need to explore the components of well-being.

1.4 Well-Being

The focus of psychology has been on the enhancement of psychopathology over shadowed the promotion of well-being and personal growth. Illness was considered as one important factor of the personality whereas wellness was referred to as the second important component and well-being was identified as an absent factor in psychopathology (Witmer & Sweeney, 1992). A strong point of view has been held by

mental health specialists who inferred the dependence of presence or absence of symptoms of mental disorders to know the state of well-being of an individual.

According to World Health Organization, well-being is a positive state of social, physical and mental well-being not solely based on the absence of illness or susceptibility (WHO, 2018). Positive psychology has been the object of considerate attention since 2000 (Seligman & Csikszentmihalyi, 2000), that is all about valuable subjective experiences, positive individualistic characteristics, and people's qualities. Positive psychological functioning and its involvement have been again outlined as the core concept of psychological well-being (Ryff, 1995 & Deci, 2001). Positive mental health is attributed to be understood as relatable to psychological well-being in this sense. Positive functioning and factors that conclude a good life has been an utmost important issue in the past several years. However there has been prominent exploration in the field of well-being.

1.4.1 Approaches of Psychological Well-Being:

Two very diverse yet over lapping perspectives and paradigms of well-being has been witnessed. The two approaches were named as Edaimonic and Hedonistic that emphasized on happiness and further states well-being as the attainment of pleasure and pain avoidance (Ryan & Deci 2001); Shmotkin, Ryff & Keyes (2002). Subjective and psychological well-being has been further prolonged as a distinct factor between Edaimonic and Hedonic. The terms were further highlighted by the fact that multidimensional well-being consists of not only emotional inhibitors happiness (hedonic

well-being) but also commemorates the higher mental processes and its assessment in satisfaction of life.

Psychological well-being consists of two paradigms i.e. positive and negative psychological well-being. Positive mental health includes self-acceptance, realization, purposeful life, mastering of situation, autonomy, good social relation and personal growth whereas negative psychological well-being includes grief as an ultimate emotional feedback to a person's grief. More measures comprises of; cognitive, behavioral, social, physical and psychological aspects (Ryff, 1995). There are various researches that support the notion of combining psychological, emotional, physical and emotional subjective well-being. They reason that subjective well-being embraces all domains of life. Keyes & Lopez (1995) proposed a model of well-being which presents an amalgamation of several dimensions of well-being. Diener (1984) has also supported this idea evaluating the dimensions by person in a comprehensive way.

The notion of psychological mental health depends upon the paradigms of philosophical thought of "positivity" in daily life (Ryff & Keyes, 1995; Ryff, 1989). The definition of well-being from various psychological and philosophical is as a "universal good and a positive life". Scientists do also believe on this perspective of fulfilled life to be as a full contentment and joy. According to this approaches, an individual will be considered to be mentally well if it possess these six specified aspects. It consists of, self-acceptance, positive happy relations with others, environmental mastery, autonomy, personal growth and purpose in life.

A positive approach towards an individual and their own self is known as self-acceptance. It helps to admit various prospects of good and bad traits and feel enthusiastic regarding their past life. They perceive themselves as a whole person and accept them who they are. Positive relations with others reflect that individuals who have higher levels of well-being have more reliable, intact and pleasant relationships. They are more worried about others well-being rather than their own and are capable of understanding affection and being with each other. They have a firm believe on give and take of human relationship. They carry off more burden of the other person and feel content to see happiness around (Ryff & Keyes, 1995).

People who possess well-being are more focused, self-determinant and autonomous. The person is prepared to handle social pressures and deal them in a more proficient way. He is able to visualize things more clearly with a variety of other thoughtful perspectives and behaves accordingly with utter evaluations of personal self (Ryff & Keyes, 1995). Environmental mastery is another component of well-being. A person who is focused on this dimension manages the surrounding more competently, regulates external accomplishments in a more complex manner. The person is more than an eye opener to make an operational use of environment and to be able to indicate contexts preferable to personal values and requirements. Challenges that come in the way are delicately and amicably hand griped (Ryff & Keyes, 1995).

To have an aspiration in life is also another factor of well-being. Strong well-being of a person tends to have aims in life and a sense of direction, emphasis on the meaning of a present and past life. It pertain belief systems that give meaning to life and has purposeful objectives for living life. People with high scores on this tend to have more goal oriented

and are fully directed to give real meaning to their pervious and on-going life. They have firm believes on a notion that life has a purpose (Ryff & Keyes, 1995). Another dimension of well-being is personal growth. A person with high well-being has a strong sense of development and perceives he is flourishing and take new challenges. The individual is wide open to new experiences and identified himself as an improved version of self and conduct over the time (Ryff & Keyes, 1995).

1.5 Anxiety

Anxiety is a part of human state that plays an important role in our lives. It enables us to recognize the danger and in response is in ‘flight’ and ‘fight’ mode (Bryant et al., 1998). The appropriate amount of anxiety assists us to accomplish better and regulate creativity. It can motivate us to deal with tough challenge. The other is insistent anxiety that causes emotional suffering and effects our mental health at worst and that prevails anxiety disorders such as phobias, obsessional behaviors and panic attacks. At this certain level anxiety can have a devastating impact on our lives in terms of distress and damaging our physical and mental health (Wells & Davies 1994).

Anxiety disorders can be elicited by disturbing recollection of memories, hatred towards specific objects on irrationals grounds, or a constant state of worry that something worse can happen in future. Characteristics defining anxiety disorders psychologically shows symptoms, such as difficulty in concentrating, irritability, depressive thoughts becomes consistent. Most often people also experience physical symptoms like palpitations, indigestion, sweating, dizziness, irregular breathing, stomach ache and diarrhea (DSM-V).

In most of the chronic cases people have defined the attack of anxiety as if they are dying. People suffering from severe forms of anxiety couldn't achieve proper sleep, or become relax. Due to distorted thought patterns; their ability to maintain proper lifestyles also gets impaired. They also had to face difficulties in maintaining personal relationships and hold on to a job as well (Fredrick & Clarke, 2000).

1.5.1 Characteristics and Types of Anxiety Disorders in DSM-V

1. **Generalized Anxiety Disorder**

   Psychological symptoms: Uncontrolled worry, redundant anxiety, poor concentration, impaired social, feeling on edge, occupational functioning and irritability.

   Physical symptoms: difficulty in sleeping, muscle tension and fatigue.

2. **Panic Disorder**

   Reoccurrence of panic attacks.

   Psychological symptoms: feeling of dying or being afraid of losing power over one's self, being afraid of not being able to flee from uneasy situations.

   Physical symptoms: Discomfort or chest pain, lightheadedness, shortness of breath, tachycardia, shivering, nausea, palpitations, sweating.

3. **Agoraphobia: results from recurrent panic attacks**

   Psychological symptoms: Anxiety, fear and avoidance in: enclosed places, to stand in a queue or to be in a crowd, public transportation, being distant from their homes.

4. **Social Anxiety Disorder**

   Psychological symptoms: afraid of embarrassment, to feel humiliated, or the fear of evaluation by others; fearful of conditions such as to speak frequently, eat or interact in a bunch of pupil or with authority figures; speaking in public; to talk with unknown people.

   Physical symptoms: sweating badly, diarrhea, flushing, heart palpitations, and quiver.

5. **Generalized Anxiety Disorder**

Main features of GAD include anxiety and worry related thoughts occurring as a component of daily routine. The differentiation between pathologic anxiety and worry depends upon the severity level of anxiety, difficult to control it and furthermore it causes social and functional damage. Worry generates anxious thoughts relating to future events and does not focus on outer proportions to what might happen next. Excessive worry is considered as an essential feature of GAD that is used as a mental defense mechanism which allows gaining power over the thinking of what or how something might happen if dreaded events occur (Behar, 2009).

Constant thinking leads to excessive worry and that learned cycle becomes a cognitive pattern that leads to further distortions. Anxiety disorders are also linked with physical illness such as respiratory and thyroid disease which leads to an increase in disability and decreased quality of life (Saren, 2006). A study conducted by (Niles, 2005) found out that patients with anxiety disorders and depression had increased rates of somatic disorders such as asthma, heart disease, back problems, migraines and ulcer.

1.5.2 Anxious Thoughts

Worry is a thinking array categorized by destructive, disturbing and repetition of thoughts about forthcoming event (Becker, 1983). Thoughts that include worry are more verbal and are referred to as futuristic uncertainties that are perceived more threatening (Beck & Clark, 1997; Freeston, Dugas & Ladoucer, 2000; Hirsch & Leigh, 2011).

Pathological worry is considered an important component in the examination and preservation of Generalized Anxiety Disorder GAD (American Psychiatric Association, 2002). Role of worry in GAD shows an increased amount of acknowledgement in the following editions of Diagnostic and Statistical Manual of Mental Disorders (DSM-V), (Kendler, 2010). However, worry has been perceived to highly correlate with various other differential anxiety disorders, such as Phobias, Depression and Obsessive-Compulsive.

Worry can be assessed by developing measures to justify and that are potentially beneficial in a range of clinical settings. Following constructs such as thoughts suppression, meta-cognition and controllability of invasive thoughts are recurrently linked with worry and is indirectly measuring it (Wells & Cartwright-Hatton, 1997; Zanakos, Wegner, & Davies, 1994). Preliminary researches on worry are vital as they enhance in recognition of the part of rumination in generalized anxiety disorders (Strodl, Mc Mahon & Khawaja, 2011; Olatunji et al., 2010).

1.5.3 Metacognition and Anxiety

Metacognition is referred to as “to think about thinking” and it is the ability or mental processes which involves monitoring beliefs, evaluation and gaining control of cognitive thoughts (Flavell, 1979). Metacognition is relatable with one’s thought processes and various factors that influence the cognitive activity, ongoing metal processes and consciousness of the existing state of mind and evaluation of the importance of thinking and memory (Wells, 2005). Based on the hypothetical context, Self-Regulatory model (S-REF), projected by Wells & Mattews (1994), emphasizes on the metacognitive factors were played their part in maintaining and developing anxiety and emotional distress.

Emotional distress is a type of anxiety that is comprised of physiological, emotional and cognitive symptoms that are further regulated by a mental thinking procedure that initiates mind-full activities and coping behavior strategies. It also stimulates prolonged and complex opinion patterns, such as sheer worry related thoughts, which gives boost to further psychological torment, depression, anxiety, and other mental dysfunctional disorders. This model of emotional disorders states that the underlying factors developing and maintaining anxiety and a range of psychological problems. They are the result of a fixed pattern of cognitive coherence where one responds to its own thoughts with relentless processing, such as rumination and worry, paying attention to imagined threats and the frequent practice of non-adjusted coping behaviors.

These types of behaviors attributes to as Cognitive Attentional Syndrome (CAS) that develops from the positive metacognitive belief systems. (e.g., “Worry helps me cope up the situations”) whereas negative beliefs (e.g., “reoccurring thoughts are threatening”)

which are correlated to thinking processes (Wells & Mathew, 1994). Essentially this approach connotes that the escalation to mental distress such as anxiety is depends upon the one's content of thought rather than someone's way of thinking (Wells, 2009). This model refers to a disparity with a more acknowledged cognitive notion, that educates us about the misinterpretations in cognitions (e.g., emotional reasoning: to think all or nothing) and distorted metacognitive belief systems (Beck, 2005).

Belief systems are linked with confusion of danger as well as the omission to cope with worries, such as "this world is not a safe place to live" and "I am an incapable and helpless". Moreover, the meta-cognitive and cognitive model acknowledges worry to be linked with anxiousness, and distinctively the cognitive element involves diligence and the process of irregular information patterns (Barlow, 2004; Craske, 1999). This model advices that worry is not to be a problem undoubtedly. Relatively it is the metacognitive beliefs itself that boots up the uninterrupted negative thinking i.e. worry, which is the hidden incentive behind anxious thoughts (Wells, 2009). This model also advocates that higher positive meta-beliefs relates to hidden benefits of worry. Furthermore associated with negative meta-beliefs suggests that worry and its related thoughts are irrepressible and destructive.

Large preservation of worry and metacognitive thoughts are the integral part of the metacognitive processes which are exhibited in the metacognitive model of psychopathology (Matthew & Wells, 1994; Wells, 2008). Various different areas of pathological worry have been discussed in cognitive behavioral theories and therapies. According to Generalized anxiety disorder (GAD), worry has been projected as a type of avoiding emotions and rumination (Alcaine, Behar, & Borkovec, 2004) and their

beliefs resulting as an intolerance of uncertainty and worry itself (, Ladouceur, Freeston, & Dugas, 1998). In comparison to that, metacognitive model of GAD affirms pathological worry to be the outcome of negative opinions about rumination and unattained strategies of mental control (Wells, 1995).

1.5.4 An explanation of the Metacognitive Model of GAD

The primitive psychological factors and thought patterns underlie various disorders that are covered by the metacognitive model (Wells, 1995).

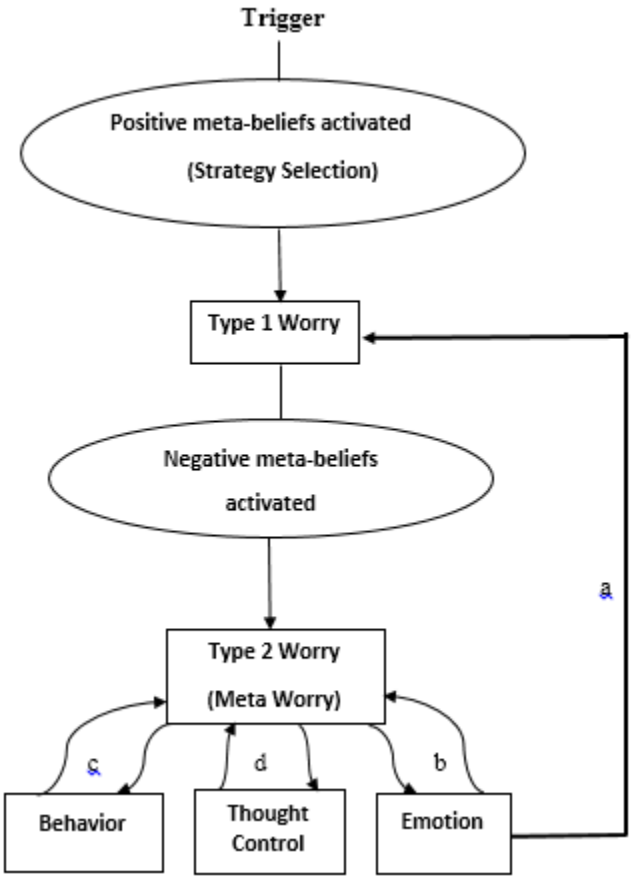

Figure 1.1: The Metacognitive Model of GAD, Adapted from Wells (1997).

The model explains different pathological worries in GAD for example many people possess negative thought that "(What will happen if I lose my job?)" that

forecasts a shadow without establishing an unfavorable negative outcome. Moreover, the person himself gets engaged in a state of worry as in to anticipate more problems, abstain from them or maybe find out a better result to it. The type has been labeled as Type 1 Worry.' "Worrying considered as a coping response that is directly associated with positive metacognitive beliefs systems" (Wells, 1995).

Following are the examples of positive metacognitive beliefs:

- "If I worry about harm in the future I'll be able to avoid it"
- "Thinking about bad things that could happen means I'll be prepared"
- "Worrying helps me cope"

GAD progresses when beliefs are formed as a response to disclosure of relative knowledge that is related to worry or interpreting it according to their own internal circumstances (Flavell, 1979). Negative beliefs tend to makes their way towards wrong assessment of the worry process as not being able to control one's self and uncontrollable and fatal for mental health. The false negative interpretations about worry are known as type-2 worry or 'meta-worry'. It clearly accelerates anxiety as threat appears more to be more prominent from worrying itself (Schraw, 1998). Following are the examples of Negative Metacognitive beliefs.

- "I have no control over my worry"
- "Worrying will make me lose my mind"
- "I am damaging my body with worry

Coping behaviors and thought control strategies are the two main crucial factors that involve maintaining the problem. When a person thinks overtly and is not able to suppress, the person suffering from GAD doesn't stops the worrying process. Instead greater thinking is used as a means of reducing thinking, creating a paradox in mental regulation. This failure to disengage from extended thinking deprives the person of an opportunity to modify erroneous beliefs about the uncontrollability of worry. Patterns that controls thought systems are an addition to overt behaviors that contribute to maintain the problem (Wellman, 1983).

1.6 Validity

Validity is described as the degree to which the tool measures what it is supposed to measure (Bloomberg et al., 2005). The validity of an instrument can also be illustrated by measuring an instrument to an extent for what it is created to measure (Robson, 2011). It measures to a limit where the outcomes are correct, and further it needs the questionnaire to accurately estimate the underlying conceptualization of the research (Thatcher, 2010). According to the quantitative research paradigms, an instrument is said to be valid when it measures what it is supposed to measure (Pallant, 2011). However doing subjective researches has their different criteria's to access the efficiency of results. It doesn't depend upon the property of a measure but rather on its scores and their interpretations (Creswell, 2014). Cronbach and Meehl introduced the issue of validity in the area of quantitative research in the middle of 20th century where they established a foundation for the application and assessment of intelligence quotient tests (Meethl & Cronbach, 1955).

1.6.1 Types of Validity

There are different types of validity, however in the present validation study, convergent and divergent validity are examined. Following is a brief overview of these types of validity.

1.6.1.1 Construct validity

Construct validity is important for hypothesis testing and empirical measures to construct a theory. Theoretical constructs are created by the researchers to understand, predict and explain behavior in a fruitful way (Thacher, 2010). Meehl and Challman from American Psychologists Association first coined the term 'Construct Validity' on conducting Psychological tests. To measure the construct effectively it should be both syntactically and operationalized. It is related to a precise use of tool, and most often is dependent of the population (Kane, 2013). To check the construct validity of an instrument, factor analysis, correlation, multi-method matrix of correlations and multi-trait correlations are used. It is further categorized into the following two forms: i) convergent validity, and ii) discriminant validity (Huck, 2007).

1.6.1.1.1 Convergent validity

It pertains to the degree to which numbered scores on a tool share a low, medium and correlation with the scores gained particularly on a whole distinctive measure which focuses to check construct related to it (Messick, 1995). Convergent validity is gained when the results established from two variant scales measuring similar framework which correlates highly with each other. Two variables in this are measured independently shows a correlation to one and the other. A general agreement is set among the ratings of

the scale, independent of one another, whereas each measure should be hypothetically linked to each other (Campbell, 1959).

1.6.1.1.2 Discriminant Validity

When two variables are predicted to be correlated and the scores found on those scales by measuring them should be independently different from one another it refers to have discriminant validity. An inadequacy of relationship occurs between the measures that are not supposed to be theoretically related (Sperry, 2004). For example, a survey has been done identifying potentially high drop-out students from school would have the divergent validity in case of the scholars who graduated from that college should score higher that students who were drop-outs before graduation (Campbell, 1959).

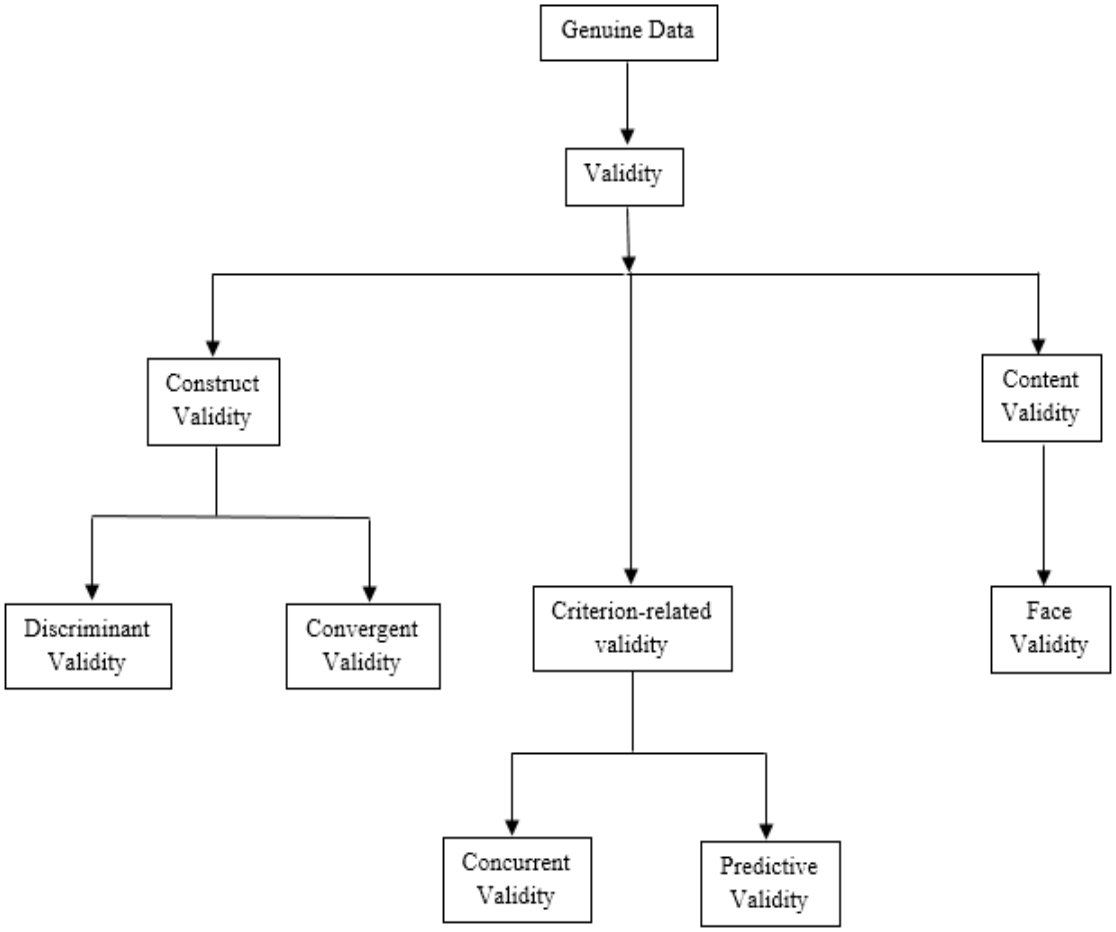

Figure 1.2: Structure of Validity (Source: Bajpai & Bajpai, 2014).

Metacognition is a multidimensional set of skills that involve "thinking about thinking." Metacognitive regulation is the monitoring of one's cognition which includes planning activities, monitoring, awareness of comprehension, task performance, and evaluation of the efficacy of monitoring processes and strategies. Insights experienced while monitoring and regulating cognition play a role in the development and refinement of metacognitive knowledge. Metacognition is related to a number of other constructs, including critical thinking and motivation. At the very least, metacognition can be seen as a supporting condition for critical thinking to the extent that monitoring the quality of

one's thought makes it more likely that one will engage in high-quality thinking. Future exploration of the role of metacognitive factors in psychopathology will be aided by the continued development of measures of metacognition. Further developments of MCQ-30 are warranted because it provides a multidimensional measure of metacognitive beliefs and monitoring tendencies most closely linked to the general metacognitive theory of psychological disorder.

Chapter II

Literature Review

Following researches have been conducted on metacognition and they subsequently offered a phenomenological framework for classifying understandingof metacognition. One of the main factors is observing one's own thinking patterns and they include activities to plan, monitor, regulate and evaluate the relationship (Cross, Paris & Schraw1995; Schraw et al., 2009). Wells & Cartwrignt-Hatton, (2004) examined individual discrepancies in metacognitive beliefs using meta-cognitive Questionnaire 30 (MCQ-30) which has been considered to be an integral part in the metacognitive theory of Generalized Anxiety Disorder (Wells, 2005).

A research was conducted to examine the psychometric properties of Spanish adaptation of the MCQ-30 on a sample of Spanish Nationals including 768 participants with the age range of 16-81 years (68.9% females, 31.1% males). English version of MCQ-30 was first translated into Spanish language. Spanish translation of the MCQ-30 was created using a back-translation procedure involving two independent translators, both of whom were psychologists and experts in GAD. Confirmatory factor analysis revealed the five-factor structure which was uniform across both genders whereas, internal consistency and test re-test reliability of the subscales were satisfactory. Theoretically significant relationships among meta-worry, pathological worry, suppression of thoughts and trait anxiety were attained. The study also revealed the convergent validity of the metacognitive questionnaire with other measures of beliefs about worry. The results concluded that Spanish version of MCQ-30 is a valid instrument

for Spanish speaking population for evaluating metacognitive beliefs (Cejudo, Vindel, & Jose, 2013).

Another study conducted by Quattropani and colleagues (2014) aimed to explore the validation and adaptation of the Italian version of the MCQ-30 on the Italian population with sample size of 306 participants who responded to the Italian version of MCQ-30. The MCQ-30 was first translated and adapted to the Italian cultural context from two independent studies about metacognition, and with the support of a native English speaker. Conforming to International Test Commission (ITC) guidelines for test were adapted for the translation of Italian version of Metacognition questionnaire. Internal consistency was examined using Cronbach's alpha and item-total correlations. Reliability and convergent validity were verified and the stability of the MCQ-30 was tested. Initially exploratory factor analysis was run and subsequently CFA was run using the five-factor solution of the English version of Metacognition questionnaire. The results indicated good psychometric properties for the MCQ-30 Italian version. The MCQ-30 showed satisfactory internal consistency and convergent validity, and showed good test-retest reliability. Moreover confirmatory factor analysis affirmed the five-factor solution. The researchers concluded that Italian version of MCQ-30 has good psychometric properties and is a valid and reliable tool for clinical research in the area of metacognitionin Italy.

Ahmet and Metehan (2008) evaluated psychometric properties of the Turkish version ofMetacognition Questionnaire (MCQ-30) on Turkish population; university graduates and undergraduates. Initially, a pilot study was conducted to adapt English version of MCQ-30 to Turkish language. The questionnaire was then translated to

Turkish language following two steps: translation and back-translation with the help of Turkish professionals with a PhD in psychology and advanced English language skills. 850 students (282 females & 568 male) from 15 Turkish universities participated in the study falling within the age range of 21-22 years. Construct validity of metacognition questionnaire was determined by doing Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). It was reported that the MCQ-30 of Turkish version consisted of 5 factors which represents the same structure of factors of initial MCQ-30. For further extension, the fit indices of CFA implied an acceptable fit to a 5-factor model consistent with the original MCQ-30. The Turkish MCQ-30 resulted in good test re-test reliability, convergent validity and internal consistency. It also showed significant positive relationship between subscales of MCQ-30. Other measure of obsessive-compulsive and anxiety symptoms in addition supported the convergent validity of the MCQ-30 Turkish version. Furthermore, they observed significant negative correlations between the age and MCQ-30 subscales. The results of the Turkish version of MCQ-30 revealed that the instrument is a valuable tool for the assessment of metacognition on Turkish population.

Another research was conducted by Marković, Purić, Vukosavljević-Gvozden & Begović (2017) who assessed psychometric properties of MCQ-30 in Serbian nonclinical (n = 246) and clinical samples (n = 171). The instrument was translated using the forward-backward procedure (Bullinger, 1995). The MCQ-30 was translated, independently, from English to Serbian language by two native Serbian experts of the English language which resulted in two versions of the questionnaire in Serbian. After the experts had reached consensus on the translation, the Serbian version was back translated

into English by another two independent native Serbian English language experts. eliability of the questionnaire and its subscales was satisfactory. An exploratory factor analysis yielded a five-factor solution in both groups, whereas a confirmatory factor analysis showed a somewhat weaker fit of the model. The MCQ-30 showed positive associations with measures of anxiety, pathological worry, depressive, and obsessive–compulsive symptoms in both samples, demonstrating adequate convergent validity. The instrument was sensitive to differences in metacognitive beliefs between nonclinical and clinical samples. MCQ-30 subscales showed incremental contributions in predicting pathological worry after controlling for the variance in obsessive–compulsive symptoms and vice versa. Results suggested that the MCQ-30 is a reliable and valid instrument for assessing metacognitive beliefs in both nonclinical and clinical samples. Moreover, the findings support the use of the MCQ-30 in Serbian population and extend support for the metacognitive model.

A research conducted by Shakeshaft and colleagues (2020) aimed to validate the French version of the MCQ-F (The Meta-Cognitions Questionnaire for Adolescents, MCQ-A) using measures sensitive to the expression of anxiety. They examined the influence of age and gender on metacognitive beliefs, anxiety and their relationships 214 adolescents (114 females) aged (13-17) completed the MCQ-F (French version) as well as the Revised-Children's Manifest Anxiety Scale (R-CMAS), French version, to assess anxiety manifestations. Constructvalidity was examined with confirmatory factor analyses. Three models were compared to the higher order five factor model proposed in the original validation study. Internal consistency and test-retest reliability were also performed. Student's t tests as well as simple and stepwise regressions were conducted to

examine age and gender as predictors. The results revealed that five correlated factors in the original version of the MCQ were retained and confirmatory factor analyses yielded comparable fit indices for a covariate factor model, as well as for a bi-factor model. Age and gender differences were found in specific sub-factors of the MCQ-F. The results also indicated that positive and negative metacognitive beliefs seem to increase with age and girls seem to score higher on the negative metacognitive beliefs and thought control dimensions. It was also found out that anxiety links between manifestations, negative and positive metacognitive beliefs, as well as confidence in one's memory. A modest influence of age and gender was also revealed.

Another research conducted by Cho, Jahng, and Chai (2012) aimed to observe the factor structure of a Korean version of the Metacognitions Questionnaire 30 (K-MCQ-30) and to further evaluate its concurrent validity. Primarily, Seol (2004) developed K-MCQ-30 by translating the original MCQ-30 into Korean, by using backwards and forwards translations into English, comparing two versions, and making minor wording adjustments under the supervision of language experts. It was found out that the resulting instrument had good-to-high internal consistency (Cronbach's alpha were .89 for the overall scale and .73 to .83 for the subscales, respectively). Confirmatory factor analyses were conducted on the data sets from two independent samples of Korean college students (n = 662; n = 664). Correlation and multiple regression analyses were conducted on the cross-sectional data from another sample (n = 97). The results indicated 5-factor model of the K-MCQ-30 which showed a good fit to the first sample after minor modification. The revised 5-factor model was replicated with the second sample. Five factors of the K-MCQ-30 had positive correlations with measures of emotional disorder

symptoms and predicted each of the symptoms in different ways. It was concluded that the 5-factor structure of the K-MCQ-30 showed good concurrent validity in nonclinical samples.

A relationship between cognitive monitoring cognitive knowledge and cognitive monitoring has been closely witnessed by numerous researchers e.g., Flavell (1979) claimed that strong metacognitive skills help individuals observe and adjust their own thinking patterns which play an effective role in the advancement of metacognitive knowledge. According to Schraw (1998), cognitive knowledge seems to ease mental regulatory processes. He also states that cognitive regulation is correlated with cognitive knowledge. The results indicates that analytical metacognitive abilities turns out to increase with the age, trends developed for metacognitive procedural knowledge relates to in their ability to control tasks were less clarified.

The capability to assess mental conditions such as belief systems, longings, intentions and to foresee a person's act based on their thinking patterns is known as Theory of Mind (ToM). A study conducted by Schneider (2008) explored the relation between theory of mind of children aged 3 years and consequent development of meta-memory. He found out that the ability to speak language i an important factor in the advancement of meta-memory. Language ability and ToM had a steady increased with the increasing age. It was further established that there was a strong relationship between ToM and meta-memory. At the age of 3, strong language ability was a significant predictor of meta-memory at the age of 5.

Another study was conducted to compare metacognitive beliefs and worry in patients with anxious thoughts, depression and non-patients. It also compared the worry related thoughts and metacognitive beliefs in them. This was a descriptive-correlational research and was conducted by Sheikh and colleagues (2012). The study included 180 participants (60 depressed and 60 anxious patients) referred to counseling centers, mental health institutes and 60 non-patient university students. Convenience sampling technique was used and unstructured interviews were taken by professional psychologist. Beck's Depression Inventory, Zung's Anxiety Scale, Penn State Worry Questionnaire, and Metacognition Questionnaire MCQ-30 were completed by the participants. Analysis showed that anxious patients had greater metacognitive beliefs and higher distress and there was a significant difference in depressed patients and non-patients participants. Furthermore, the results showed a significant positive correlation between metacognitive beliefs and worry in both samples. However, among depressed patients it showed non-significant correlation. They concluded that metacognitive beliefs are meticulously linked to worry specifically in anxious patients.

Bransford, Brown, and Cocking (2000) stated that higher order thinking and self-mastery are identifies to be essential factors for inculcating effective training and attainments. Azevedo (2005) stated metacognitive expertise in students can be cultivated through providing a useful set of instructions. Another study by Rynearson, Kerr and Taraban (2000) examined the relationship between metacognitive competence and learning strategies among university undergraduates. Metacognitive skills were assessedin freshmen and they were found to play an important role in their academic

achievement. Findings affirmed that metacognitive skill set used for comprehension reading could boost up college undergraduates performance in academics.

A research conducted by Chun-Yi & Hsiu-Chuan (2011) examined the applications of metacognitive learning and its effect on training. The main objective of their study was to construct a learning environment based on internet and to explore the impact of the web-based training and skills. The study had pretest-posttest quasi-experimental design. Fifty-three students from different colleges were divided into control and experimental groups. The training sessions of those college students continued for four weeks. Paired-samples t-test results revealed that there was no significant difference in the control group whereas experimental group posttest scores were significantly higher than the pretest scores in self-plan and self-monitoring. In comparison to the experimental group self-monitoring was significantly higher in comparison to self-plan in control group.

Ross and Green (2006) explored relationship of adjusting their academic strategies with cognitive requirements of testing in college graduates. Results showed that to be aligned with the cognitive thinking order of examination students would modify their academic strategies whereas, performance was mediated as a result of strategies that were implied academically. It was also established that teachers should set the tests or homework according to cognitive processes depending upon the level of instructions. Gunter, Schwab and Easters (2003) proposed that metacognition-based instructional methods can nurture students' ability to monitor their own cognitive processes. Metacognitive support can enhance effective learning. In addition, metacognitive skills

training can help students to prepare for future learning even in environments without scaffolds (Wagster, Tan, Wu, Biswas, & Schewartz, 2007).

2.1 Metacognition and Anxiety

One of the most frequently occurring anxiety disorders in terms of prevalence in general population is known as Social Anxiety Disorder (Furmark, 2002; Kashdan & Herbert 2001; Nice, 2013; Kessler et al., 2005). Higher levels of anxiety distort the functioning at both physical and psychological levels. It develops severe disabling situation which evolves its self into a chronic psychiatric dysfunction which results in adverse quality of life (De Visser et al., 2010). Prevalence of social anxiety disorder more often starts to develop in early teenage to late teens with various clinical characteristics displaying dysfunctional deteriorations in physical, psychological, social and behavioral performance. Furthermore, as the metacognitive model was originally presented by Wells and Mathew (1994), belief systems about thinking processes have been linked in the increase of psychiatric problems within clinical range but a few researches have been conducted on social anxiety disorders and metacognition.

Keneeth (2014) explored metacognition, particular thinking patterns and perception, using a cross-sectional design. Purposive sampling was used and a set of complete questionnaires were administered on the participants. The results indicated that metacognition showed a positive correlation with social anxiety and metacognitive belief systems about the recurrent thought patterns and instability was the strongest predictor of social anxiety. The results also showed that metacognition plays a vital role in the development of social anxiety irrespective of self-reliant thinking, S-REF model (Wells

& Mathew, 1996). There is research evidence to justify the relationship between negative thinking about rumination, metacognitive thinking and pathological disorders in University students (Bailay, Spada, & Wells, 2013).

Intolerance of uncertainty plays an important role in the progress and continuation of anxiety and worry in adults. It was increased rapidly with the passing time in children and young people. Nihan, Cathy and Hellen (2018) conducted a meta-analysis on Intolerance of uncertainty with reference to worry and anxiety in adolescents. The review was based on 31 studies that explored the relationship of Intolerance of uncertainty with anxiety and worry which resulted in an account for 36% of variance with anxiety and 39% in worry. They found out that both the variables have a strong association between anxiety and intolerance of uncertainty in adults and children. Consequently, Intolerance of uncertainty can be a distinct construct to mark for betterment in treatment of adults.

A most prominent feature of anxiety disorder is worry. At a very young age children starts to develop worry so it's very essential to know how and when it starts to evolve and how to restrain from the negative long-term results. A research was conducted by Rabner and colleagues (2016) which explored the level of worry in children and adults and how relationship between Separation anxiety disorder (SAD) and Social anxiety disorder were found to be prevalent at different age groups. The sample was consisted of 127 children with the age of 8-12 years and young adults with the age range of 13-18 years. They were diagnosed with anxiety disorder and a complete a set of measures of rumination, depression and anxiety were administered. The scores of worry did not differ in children of different age groups. Symptoms of Social anxiety disorder showed a significant correlation with worry in both age groups whereas; symptoms of social

anxiety disorder were only significantly correlated with worry in young adolescents. After the covariates were added, social anxiety disorder symptoms remained significant in the regression model with adolescents. The results indicated that worry was significantly correlated with worry in both children and adolescents and it establishes a baseline for worry as a permanent construct linked with anxiety disorders throughout childhood and in early adolescents.

A number of researchers have paid attention on illustrating intrusive and excessive thoughts such as worry and obsessions. Calamari, Riemann, Janeck, and Heffelfinger (2003) provided evidence to the claim that cognitive self-consciousness plays an important role in the advancement of obsessive-compulsive disorder from other anxious patients (Cartwright-Hatton & Wells, 1997).

Gwendoljn, Erric and Peter (2005) explored the relationship between cognitive self-consciousness and meta-worry, and the link with symptoms obsessional thoughts and worry. They included 35 undergraduates in the study and they completed the extended version of Cognitive self-consciousness Scale, Penn State Worry Questionnaire, Meta-Worry subscale of the Anxious Thoughts Inventory, and the Padua Inventory-Revised. The results indicated that meta-worry and self-consciousness were moderately correlated. Moreover, the constructs were also positively associated with the symptoms of worry and obsessional thoughts. Thinking about self-consciousness and meta-worry were significantly correlated with both type of symptoms. However, correlations between cognitive self-consciousness, worry and obsessional thoughts were counterbalanced and no longer proved to be significant. The results implicated that to understand excessive,

intrusive thought patterns; meta-worry plays an important role as compared to monitoring an individual's thought processes.

Excessive prolonged anxiety and worry are the main characteristics of generalized anxiety disorder. Controlling anxiety is not an easy task when worry related problems occur in an individual whereas, strategies of thought controlling processes among people with GAD have not been investigated. Meredith and Richard (2005) conducted a research on thought control strategies in GAD patients. The sample included 42 patients with GAD and 55 patients with NACs (non-anxious controls) and they completed the thought control questionnaire (Davies & Wells, 1994). Patients who had GAD had significantly higher worry and punishment action plan. Less number of patients was distracted and social controls were reported in patients with GAD as compared to NACs. Furthermore, punishment strategies and worry showed a positive correlation with depressive symptoms and excessive amount of worry, whereas, social control strategies and distraction showed a negative correlation with the distinct characteristics.

It has been found out in various researches conducted on anxiety that worry and metacognition are associated to the growth of anxiety in individuals. Metacognitive theory advocates that metacognition and its beliefs is the most important factor in the development of anxiety and worry (Wells & Mathew, 1994; Wells, 2009). Truls and colleagues (2017) conducted a longitudinal prospective study which examined whether metacognitive beliefs, worry, or the interaction between both, were the significant predictors of anxiety over the period of time. 190 undergraduate students were included as a sample which were later on determined on the measures of metacognitive beliefs (MCQ-30), measures of worry (PSWQ) and anxiety (BAI) at 3 different points in times

over a period of 7 months. Another mixed- model approach analysis indicated that metacognitive beliefs and worry predicted anxiety, with further no implication of an interaction effect (PSWQ*MCQ-30). Furthermore, analyses of metacognition questionnaire MCQ-30 subscales revealed that the prevalence and development of anxiety depends specifically on the negative metacognitive beliefs. Whereas, gender showed a positive correlation with worry and was also the predictor of anxiety beyond the effect of worry. Given that the results signify that worry and metacognitive beliefs plays an imperative role in the development of anxiety.

To avoid mental health problems one must have good well-being. Yoshitake, Keisuke & Tomoko (2017) conducted a research to investigate the effects of psychological well-being on cognitive openness (fear of negative beliefs about worry and anxiety) and GAD (generalized anxiety disorder) symptoms among 297 under-graduates in a two-wave prospective cohort study. Scales used for the study were Depression Scale, Generalized Anxiety Disorder Questionnaire, anxiety control subscale of Affective Control Scale, Negative belief about worry subscale of Metacognitions Questionnaire and Nishida's psychological well-being scale. The buffering effect of psychological well-being on the relationship between cognitive dissonance and generalized anxiety symptoms at baseline, negative beliefs about worry and fear of anxiety predicted levels of generalized anxiety at follow-up. After the controlling the baseline symptoms, three interactions terms significantly predicted generalized anxiety symptoms. Autonomy and purpose in life shielded the relationship between generalized anxiety symptoms and cognitive subjection. On the contrary, relationship with others positively correlated at a baseline and aided a positive relationship between fear of anxiety and generalized anxiety

disorder. Results revealed that elevated purpose in life and autonomous dimensions of mental well-being were successful in preventing GAD, whereas the increased positive relationship with other categories of psychological well-being (PWB) may further aid generalized anxiety. It may be favorable to acknowledge the other dimensions of well-being in the primary prevention clinical setting.

2.2 Metacognition and Well-being

A research conducted by Maria, Peena, Rossetti and Agus (2012) investigated the impact of metacognition and depressive symptoms in predicting mental well-being in diverse aged healthy adolescents. Another aim was to find out the effect of gender and age on metacognition and depression. Participants were categorized in different age groups i.e. young (20-30 years), old (65-74 years), very old (75-84 years) and oldest one (more than 85). Social desirability, psychological distress, subjective wellness and cognitive efficiency questionnaires were administered on them. The results revealed that depression, desirability, cognitive functioning as significant predictors of well-being. However, effect of age and gender was significant on depression and meta-memory.

Research evidences support the link of demographics and other environmental aspects with contentment. In a demographic research done by Campbell & Rodgers (1976) investigated that the following features reported the inconsistency of psychological health less than 20%. However, some other researchers have found that there are some demographic variables that consistently predict psychological well-being (Suhail & Chaudry, 2004).

Ryff (2001) identified a number of factors affecting an individual's psychological well-being. Age has been considered as an important factor and it has been observed that the level of satisfaction with life does not change with age however it can be increased. Although turn down of earnings and marriage occurs in later life, still one's satisfaction with life remains constant (Keyes, Shmoktin & Ryff, 2002). It has been found that there is a little yet significant relationship between psychological health and educational career (Diener, Sandvick, & Seidilitz, 1993). Diener et al., (1993) there is a strong relationship between well-being and education especially for those with lower incomes or who live in poor countries. The reason for that might be due to the benefit of education which creates more leisure interests that lead to some other sources of happiness, and also due to the social status which is provided by education (Diener et al., 1993; Veenhoven, 1997).

Financial satisfaction has been reported to be strongly correlated with well-being. Studies also indicate that happy people earn maximum incomes. Comparatively, people with more wealth are reported to be happier in general (Diener, 2000). Moreover, evidences suggest that unmarried, separated, or divorced people are less happy than married ones (Diener, Suh, Lucas & Smith, 1999). Apart from the factors like age or gender, there is a significant relationship between marriage and happiness. Researchers believe that marriage safeguards in opposition to the life adversities. It also offers psychological, emotional and financial support that result in a healthy state of psychological well-being (Diener, 2002). Research evidence also reports gender differences in psychological well-being among individuals. A study conducted by Fujita, Diener and Sandvick (1991) revealed that women have greater degree of positive

emotions compared to men. It may happen because, there is an evidence suggesting women experiencing more frequently negative and positive emotions than men.

A study was conducted by Hamid, Asghar, Maryam & colleagues (2013) in Iran to explore the relationship between the states of metacognition, psychological well-being and problem solving among students. The sample comprised of 97 students ranging in ages between 14-18 years of age and was recruited from Isfahan secondary and high schools students (50 girls & 47 boys). The Hepner and Peterson's problem inventory (1982), State meta-cognitive inventory (Onil & Abedi, 1996) and Ryff's Psychological Well-being scale (1989) were administered on participants. The results showed a significant positive relationship between psychological well-being and components of metacognition. On the contrary, a significant negative relationship was found between psychological well-being and problem solving in students. Stepwise multiple regression revealed that personal control, trust and approach avoidance style in problem solving, self-monitoring and awareness were the significant predictors of psychological well-being among students. The students who were completely aware of their mental thought processes in finding hindrance to learning problems and assigned tasks were confident in problem solving. They used less avoidant style, had positive psychological well-being and adaptability in coping with assigned tasks and concerned problems.

Rasoul & Sima (2018) conducted a study to explore the relationship among mindfulness, spiritual well-being and meta-cognition in gifted high school students. The sample consisted of 144 gifted high school students in Tabriz, Iran and systematic random sampling technique was used Five Facet Mindfulness Questionnaire, Spiritual Well-being Questionnaire by Elison & Paloutzian and Meta-cognition Questionnaire by

Wells were used by Wells. Results showed that both spiritual well-being and mindfulness exhibited a significant and positive relationship with each other. Furthermore, stepwise regression analyses revealed positive beliefs about worry explained 4% of the variance for mindfulness and non-judgment explained 6% of the variance for spiritual well-being. The results indicated that positive beliefs about worry were persuasive in determining the mindfulness irrespective of metacognition. Moreover, non-judgment played an important role in regulating spiritual well-being among components of mindfulness.

Metacognition identifies three clusters of mental capability which involves reading of comprehension, mental awareness, monitoring and regulation of assigned tasks (Haller et al. 1988). In accordance to this structure, awareness of metacognition involves recognition of direct and indirect knowledge and acceptance of text incongruities and discrepancies. It includes asking one's self, setting up goals, paraphrasing, admissible background knowledge, establishing connections between fresh and earlier grasped content and compilation of comprehension during reading text. As a result regulation of metacognition refers to compensation of strategies to maintain and alter comprehension framework.

2.3 Indigenous researches

A study conducted by Chohan and Kausar (2015) aimed to explore metacognitive beliefs, meta-emotions and dysfunctional eating in University students. Correlational research design was used. The sample of 200 university students with equal number of boys and girls was selected from different departments of Government College University and University of Punjab, Lahore. Metacognition Questionnaire (Wells &

Cartwright, 2004), Beliefs about Emotions Questionnaire (Manser et.al, 2011) and Three-Factor Questionnaire-R18 (Karlsson, Persson, Sjostrom, & Sullivian, 2000) were used for assessment. Correlation, hierarchical regression and independent sample t-test analyses were conducted to analyze data. The results showed that cognitive restraint had a significant positive relationship with cognitive confidence in boys and with positive beliefs, need to control thought and contagious emotion in girls. Uncontrolled eating had a significant positive relationship with negative beliefs, cognitive confidence in both boys and girls and had a positive relationship with overwhelming and contagious emotions in boys and shameful emotions in girls. Moreover, motional eating had a significant positive relationship with cognitive confidence and cognitive consciousness in boys and with cognitive confidence and invalid emotions in girls. Gender did not moderate the relationship between metacognition, meta-emotions and dysfunctional eating.

A study was conducted by Aisha and Jamil (2018) to explore the moderating role of gender in the relationship between negative well-being and positive beliefs about rumination mediated serially by meta-worry and emotional coping. The sample consisted of 514 employed professionals working in four well-reputed organizations. They completed Anxious Thought Inventory, Positive beliefs about Rumination Scale (PBRS), Well-being Questionnaire WBQ-12 and Coping Inventory for Stressful Situations. The results showed positive relationships among all the research variables. Moderation of gender was examined in both implicit and explicit regression paths. The path between emotion-oriented coping and meta-worry was moderated by gender. Emotion-oriented coping mediated the effect of meta-worry on negative well-being and positive beliefs about rumination were mediated by meta-worry on emotion-oriented coping. A mediating

role of gender especially for men only appeared to be significant in moderated mediation with direct and total effect of gender. The path that was indirect from positive beliefs about negative well-being was mediated serially by emotional coping up and meta-worry for both the genders (men & women). Men who were represented with organizational settings suggested that instead of keeping meta-cognitive beliefs, the total and direct effects were significantly buffered in men for meta-worry. Despite the fact, negative well-being within organizational setting was predicted by emotion-oriented coping irrespective of gender. The finding suggests detrimental effects on well-being with the follow-up of an emotion focused approach within proactive environment based on the needs.

Metacognition is a self-explanatory process which aids an individual to explore the strategies to adapt and learn. It enables the students to gain mastery in performance and orientation which results in high academic achievement. A study conducted by Gul and Shehzad (2012) aimed to find out relationship between metacognition, goal orientation and academic performance among graduate students of public and private sector Universities. A sample of 345 students (male & female) was collected using convenient sampling technique. Goal Orientation Scale, Metacognition Awareness Inventory were used for assessment. Results indicated that there was a moderate relationship between goal orientation, metacognition and academic achievement but a weak relationship was found between achievement and metacognition.

An outstanding teacher is not the one who has command over the specified areas but also have reflective communication skills. These skills can be more effective when groomed by trainings and workshops. Metacognition plays a promising role in student's

learning and also enhance their learning capabilities. Most of the researches conducted in the field of metacognition found out that student's academic performance were improved when teachers used metacognitive skills in their classroom activities. A research was conducted by Mumtaz and Gazal (2014) and it aimed to discover the effects of metacognitive skills on prospective teachers' presentation skills. Undergraduates from University of Education were taken as a sample and they were divided into 2 groups (experimental & control group). Metacognition awareness Inventory (MAI) by Schraw and Dennison (1994) and checklist were used to assess metacognitive skills and presentation skills of prospective teachers respectively. Results indicated that performance in the presentation of prospective teachers was significantly enhanced after the treatment plan.

Academics play an important role in shaping up and advancing the lives of students throughout the world and are also known to be the future of their country. Students dropping out from colleges and universities face various problems continuing their study again and it further affects their mental capabilities and behavior. This leads researchers to ponder upon the factors affecting their performance in academic failure and success. In this context a study was conducted by Mussarat and Semmab (2018) who investigated the role of styles in teaching as moderator between meta-cognitive awareness and study habits among male and female graduate students. The sample consisted of 400 students with equal number of girls and boys falling within the age range of 18-25 years. Questionnaires used for assessment were Metacognitive Awareness Inventory (MAI, Schraw & Dennison 1994) measuring two component model including regulation of cognition and knowledge, Study Habits Inventory (Wrenn, 1941) and

Teaching Questionnaire (Chen, 2008) measuring democratic, indifferent teaching, laissez faire and authoritarian styles. Results revealed that metacognitive awareness was found to be positively correlated with teaching styles and study habits in the University students. Results also suggested that metacognitive awareness positively predicted study habits in university students. The results of hierarchical regression analysis indicated that various teaching styles significantly moderate the relationship between study habits and meta-cognitive awareness.

Researches emphasized on the need to improve metacognitive abilities, to comprehend, understand and adapt various learning and teaching styles. Researchers are working to enhance meta-cognitions of individuals not only in academics but in other professions as well. In schools, colleges and universities programs have been introduced to develop and enhance cognitive structures and to think out of the box. Moghadam and Cheragain (2015) discovered that quality of education still needs improvement so that the academics and effectiveness in learning is more enhanced. Metacognition instigates regulatory, reflective and constructive learning for learners of diverse intellect and at various levels of academics (Iiskala, Vauras, & Salmon, 2011). It was also witnessed that distorted self-evaluations and lower levels of meta-cognition had adverse effects on effective learning which also negatively affected students' performance and their abilities. Whereas on the other hand, higher levels of meta-cognition enhances individualistic performance by permitting them instigates the capabilities they have but to be also aware about the strengths they do not acquire (Baddareen, Ghaith & Akoura, 2015). A lot of work has been done but still there is a room for a lot of development and investigation of metacognitive abilities at all personal and professional levels.

2.4 Rationale of the Study

Validation of the Urdu version of Metacognitive Questionnaire in Pakistani population is need of the hour as this will help researchers to find out the metacognitive abilities in its cultural context. It will also enable to understand the patterns of critical thinking and critical evaluation of their own perceived knowledge. It will also help researchers to make more skillful strategies to make our thinking and learning better in a purposeful way and will enable the researchers to know about the thinking capabilities and comprehension of knowledge of Pakistani Population. Metacognition Questionnaire MCQ-30 has been translated and validated into many languages such as Italian, Serbian, Korean and French and is considered to be a valid tool for the evaluation of metacognitive and worry related thoughts. As this scale has also been translated and validated on Turkish population which showed that the tool is reliable and a valuable measure for the assessment of metacognition on Turkish people (Toushan & Irak, 2008). Furthermore, metacognition scale was also translated and validated on Spanish people to find out their metacognitive abilities, pathological worries and though suppression. The findings suggested that Spanish version MCQ-30 is a valid instrument for the evaluation of metacognitive beliefs in the Spanish speaking population (Cejudo, Salguero & Vindel, 2013).

2.5 Objectives of the Study

- To validate the Urdu version of Metacognition Questionnaire MCQ-30 with Pakistani Population.
- To confirm factor structure and to examine psychometric properties of the Metacognition Questionnaire.
- To examine convergent and divergent validity of Metacognition Questionnaire MCQ-30.

Chapter III

Method

3.1 Sample

The sample consisted of 503 undergraduate and post-graduate university students. Age range of the participants was 18-40 years and they were taken from different universities using non probability sampling technique.

3.1.1 Inclusion Criteria and Exclusion Criteria

- Undergraduate and post- graduate students from Government and Private sector Universities recognized by HEC were included.
- Students with any apparent physical disability were excluded.

3.1.2 Demographic Characteristics of the Sample

The information pertaining to gender, age, education, Institute, department, degree - program, semester, family income, family system, number of siblings, year of birth, job, occupation, personal monthly income, marital status. Number of children, mother and fathers' status i.e. whether alive or not, their academic qualification, occupation, monthly income was gathered. Table 3.1 presents data on demographic characteristics of the study sample.

Table 3.1

Descriptive Statistics of Demographic Characteristics of the Sample (N=503)

Variables	*f (%)*	*M (SD)*
Gender	-	-
Female	261(51)	-
Male	242(48)	-
Age (years)	-	22.6(2.8)
Institute	-	-
Private sector	237(47)	-
Government sector	266(52)	-
Departments	-	-
Natural Sciences	158(31)	-
Social Sciences, Arts & Languages	152(29)	-
IT	87(17)	-
Business and economics	99(19)	-
Law	7(1)	-
Degree Program	-	-
BS 4-year	291(57)	-
MA/MSC	106(21)	-
M.Phil	97(19)	-
Ph.D	8(1)	-
Family Monthly Income in RS	-	104091(105053.59)
Family system	-	-
Nuclear	339(67)	-
Joint	164(33)	-
Number of Siblings	-	-
None	16(3)	-
1-5	389(75)	-
6 & above	98(20)	-
Student work status	-	-
No	410(81.5)	-
Yes	93(18.5)	-
Occupation	-	-
Skilled worker	70(13.9)	-
Manual worker	7(1.4)	-
Self employed	11(2.2)	-
Government services	6(1.2)	-

Monthly income in PKRs.	-	6858(17495.5)
Marital Status	-	-
Unmarried	476(94.6)	-
Married	24(4.8)	-
Divorced	3(0.6)	-
No of Children	-	-
1-4	13(6)	-
Father Alive	-	-
No	46(9.1)	-
Yes	457(90.9)	-
Father Occupation	-	-
Unemployed	9(1)	-
Skilled worker	129(25.6)	-
Manual worker	49(9.7)	-
Self employed	160(31.8)	-
Government services	92(18.3)	-
Army officer	18(3.6)	-
Father Income	-	97354.5(194879.1)
Mother Alive	-	-
No	33(6.6)	-
Yes	470(93.4)	-
Mother Occupation	-	-
House wife	404(80.3)	-
Skilled worker	46(9.1)	-
Self employed	4(0.8)	-
Government services	16(3.2)	-
Mother monthly income in PKR	-	8159(25590.6)

3.2 Operational definitions of the variables

3.2.1 Metacognition

Beliefs and evaluations that people have about their automatic thoughts can be positive or negative (Wells, 2010). According to Flavell (1979); Moses and Baird (1998), there are two components of metacognition known as “metacognitive knowledge” and “metacognitive regulation". Metacognitive knowledge includes the first beliefs or knowledge about the factors that influence the process and outcome of cognitive functions. This knowledge may be right or wrong and when it is activated, it affects the thought process and procedures. Metacognitive regulation refers to the number of executive actions such as planning, monitoring and reviewing, checking, detecting and correcting errors. According to the theory of Self-Regulatory Executive Function Model (Wells, 2000) two general components (metacognitive knowledge and metacognitive regulation) interact and they have a great significance in Wells' theory (2000). Researches indicate a positive association between metacognitive beliefs and worry (Marcantonio et al., 2010; Nordahl et al., 2010).

3.2.2 Anxious Thoughts

Anxiety is a part of human state that plays an important role in our lives. It enables us to recognize the danger and in response is in ‘flight’ and ‘fight’ mode. Anxiety disorders can be elicited by disturbing recollection of memories, hatred towards specific objects on irrationals grounds, or a constant state of worry that something worse can happen in future. Characteristics defining anxiety disorders psychologically shows symptoms, such as difficulty in concentrating, irritability, depressive thoughts becomes consistent. Most

often people also experience physical symptoms like palpitations, indigestion, sweating, dizziness, irregular breathing, stomach ache and diarrhea (DSM-V, 2013). Worry is a thinking array categorized by destructive, disturbing and repetitive thoughts about a future event (Becker, Rinck, Roth, & Margraf 1998; Borkovec Robinson, Pruzinsky, & DePree, 1983). Thoughts that include worry are more verbal and are referred to as futuristic uncertainties that are perceived more threatening (Beck & Clark, 1997; Freeston Dugas & Ladoucer, 2000; Leigh & Hirsch, 2011). Worry and its consequences make it an essential cognitive construct of anxiety (Clark & Beck, 2012; Wells & Carter, 2001).

3.2.3 Well-Being

Being happy, healthy and prosperous is equivalent to the state of well-being. It includes concepts like personal, social and psychological well-being and other aspects as well as health- related behaviors. However, self-acceptance, positive functioning, positive relations with others and purpose of life are also included in various aspects of well-being. It is a part of everyday discourse and presents a notion of positive over negative affect (Bradbum, 1969). Well-being is comprised of two aspects i.e. positive well-being and negative well-being. Positive well-being is characterized by self-approval, actualization, purposeful life, situational mastery, autonomy, healthy social relation and individual growth. On the other hand, in negative well-being; grief is an emotional response to loss. Other dimensions include physical, cognitive, behavioral, social, and psychological aspects (Ryff, 1995).

3.3 Assessment Protocol

In the present research, following tools were used.

- Demographic Information Sheet.
- The Metacognition Questionnaire MCQ-30 (Wells & Cartwright-Hatton, 1997).
- The Well-Being Questionnaire (W-BQ 12) (Bradley 1996, revised short version, 2002).
- Anxious Thoughts Inventory AnTI (Wells, 1997).

3.3.1 The Metacognition Questionnaire MCQ-30 (Wells & Cartwright-Hatton, 1997) (Urdu translated version, Chohan & Kausar, 2015)

The Metacognitions Questionnaire–30 (MCQ-30) is a self-report measure that assesses metacognitive beliefs (i.e., beliefs about thinking). The MCQ-30 items are rated using a 4-point ordered-category scale. The range starts from 1 (do not agree) to 4 (agree very much). Cartwright Hatton and Wells (2004) found that metacognition questionnaire determines the five metacognitive beliefs: (a) positive beliefs about worry (e.g., "worrying helps solve problems"); (b) negative beliefs about uncontrollability and danger of worry (e.g., "worrying can make me sick"); (c) cognitive confidence (e.g., "I do not trust my memory"); (d) need for control (e.g., "I should control the thoughts all the time"); and (e) cognitive self-consciousness (e.g., "I am constantly aware of my thinking"). The MCQ-30 scales showed good internal consistency (Cronbach's αs ranging from .72 to .93), satisfactory test-retest reliability (ranging from .59 to .87 after a month), and medium-to-high correlations (ranging from .25 to .73) with indices of anxiety (Cartwright Hatton & Wells 2004). Urdu translated version of metacognition

questionnaire MCQ-30 was used for the study. The scale was translated by Chohan & Kausar (2015).

3.3.2. Well-Being Questionnaire W-BQ 12 (Bradley 1996, revised short version, 2002)

Well-being was assessed by using Well-being Questionnaire which has different subscales that measures overall psychological well-being of an individual. Originally the scale was designed and used by World Health Organization in 1982 to assess the psychological well-being of patients with diabetes (WHO, 1994). The scale consisted on 22 items with 4 subscales, labeled as Depression, Anxiety, Energy and Positive Well-being. Later on, a short version of W-BQ22 was developed comprising of 12 items further consisting of three subscales (each scale with 4 items): Negative Well-being (NWB), Energy (ENE), and Positive Well-being (PWB). W-BQ12 can also be used to assess over all General Well-Being (GWB). The scale was developed by Professor Clare Bradley and was further revised from 22 items to 12 items in 2002. The items are scored on a scale from 0 (not at all") to 3 (all the time"). Internal consistencies were highly satisfactory overall. Alpha reliability for the total well-being scale was 0.85 (Bradley, 1996). The Urdu translated version of the Well-being Questionnaire W-BQ12 used.

3.3.3 Anxious Thought Inventory (Wells, 1997; Urdu translated version, Wahid & Kausar, 2020)

Anxious Thoughts Inventory (AnTI) is an instrument which intends to measure the individual susceptibility towards various dimensions of anxious anxiety. Wells (1994) has conceptualized Anxiety inventory as consisting of 22 items which was further

categorized into three main factors: social worry, physical health worry, and meta-worry. Individuals respond to various items on a 4-point Likert type scale for example: not at all (1), sometimes (2), often (3), almost always (4) to see how true each statement is, and the results gained by adding up the scores. The reliability scores for the subscales are high (social worry =.84, physical health .81, meta-worry =.75) and test re-test reliability with in a six weeks interval was (r=.80). The measure had the power to sense the distinctiveness between non-clinical and clinical groups (Wells, 1994). The Anxious Thoughts Inventory was translated in Urdu by Kausar & Wahid (2019).

3.3.4. Translation of Anxious Thought Inventory

To translate the Anxious Thoughts Inventory AnTI, MAPI guidelines for translation of tools were used. The tool was translated in forward and backward by bilingual experts from psychology and pilot testing was conducted to confirm the understanding of the questionnaire. The first phase was the translation of the scale in Urdu. MAPI guidelines were followed for translation of measures.

3.3.4.1 Step I- Forward Translation. Official permission was taken from the authors of the scales. Two experts of English Urdu language were asked to translate the scale in Urdu. They were Ph.D. scholars and had a minimum 4 years of experience of translation. They were asked to translate the Anxious Thoughts Inventory into Urdu considering the bilingual meaning (Urdu English meaning). At the end, Urdu translations were examined and rearranged by the researcher and supervisor. They selected appropriate translated statements which were indicating precise and original meaning of

the words. The report was reviewed considering the MAPI Research Institute and was finally discussed with the supervisor.

3.3.4.2 Step II- Backward translation. In this step, the researcher did backward translation (also named as blind translation) into English Language of the Urdu translation of Anxious Thoughts Inventory was done. The Urdu version of the scales was given to two bilingual translators. The professional translators translated the reconciled Urdu Version of scales into English language for backward translation. The translators were different than the ones who were involved in forward translation. The backward translations were then compared with English version scales by the researchers to identify any discrepancy.

3.3.4.3 Step III- Review of forward and backward translation. To check the conceptual differences between translated versions the final review was done for forward and backward translations. Both English and Urdu versions of the translations were reviewed where every item was verified to be sure of the conceptual discrepancies and was corrected in order to finalize forward translated versions. A version of the Urdu translated scale was selected.

3.3.4.4 Step IV- Cognitive interviewing. It involves testing of the final Urdu translated scale on the required population. Cognitive interviews were conducted to assess the feedback of the participants for clear understanding of statements and instructions along with reasonable choices of respondents. However, no query or difficulty identified by the respondents, but statements was ensured of the clarity of words again.

3.3.4.5 Step V- Psychometric validation. The final Urdu version of the scale was administered on the participants to establish psychometric properties. The sample included 500 students from different universities. Afterward, calculation of reliability was done.

3.4 Procedure

First, permission was obtained from the authors of the measures to use them in the current study. Research proposal was approved from Departmental Graduate Committee,Department of Psychology, University of Management and Technology. Before starting the data collection, a letter was obtained from the authority of the Department that explained nature and purpose of the research and requested for the permission for data collection. Permission was sought from the relevant authorities of different Universities. Researcher selected participants based on inclusion and exclusion criteria from different Public and Private sector Institutes. Participants of the study were informed about nature of the research and their consent was also taken. Participants were assured of the confidentiality of the information regarding the results. After the questionnaires were given to the participants they were briefed and given instructions about filling the questionnaires.

3.9 Ethical Considerations

The following ethical considerations were ensured in the present study.

- Permission for use of the scales was sought from the authors.
- Informed consent was taken from the participants of the study and was were informed about the voluntary participation and their right to withdraw and terminate their participation at any point of study they wish to.

- Participants wereensured that their identity will not be disclosed to anyone.
- The participants were assured that the information acquired from them will be held private and would not be used for any other purpose other than this research.
- Participants were told that they have right to know the research findings.
    - Results were reported accurately.

Chapter IV

Results

In the current study Confirmatory Factor Analysis through AMOS was performed on the Metacognition Questionnaire MCQ-30 Urdu to explore the factor structure of the scale. Correlation analysis with MCQ-30 and other questionnaires (Well-being Scale and Anxious Thoughts Inventory (AnTI) for convergent and discriminant validity was also done. Overall, data analytic strategy involved descriptive statistics, reliability analysis, Pearson moment correlation and Confirmatory factor analysis (CFA).

The assumptions that are necessary to run CFA include multivariate normality, a sufficient sample size (n> 200), the correct prior model specification, and data must come from a random sample that were met prior conducting CFA. It is conducted on an already established scale, which has already been validated and tested on populations of different cultures. The scale has shown good reliability and validity on a population and measures a significant construct. So as a researcher, I want to validate Metacognition Questionnaire on Pakistani population to know its significance in our own cultural context.

Correlation was carried out to find Inter-item correlation of Metacognition. Results are shown in table 4.1

Correlation was carried out to find Inter-item correlation of Metacognition. Results are shown in table 4.1

Table 4.1

Item-item Correlation of Metacognition (N=503)

	MC1	MC2	MC3	MC4	MC5	MC6	MC7	MC8	MC9	MC10	MC11	MC12	MC13	MC14	MC15
MC1	1														
MC2	-.09*	1													
MC3	.31**	.31**	1												
MC4	.07	.30**	.31**	1											
MC5	.23**	.04	.27**	.16**	1										
MC6	.21**	.14**	.27**	.27**	.22**	1									
MC7	.31**	.08	.25**	.10*	.29**	.27**	1								
MC8	.10*	.15**	.10**	.12**	.08	.18**	.17**	1							
MC9	.09*	.24**	.44**	.32**	.18**	.22**	.25**	.15**	1						
MC10	.34**	.04	.23**	.06	.16**	.15**	.27**	.20**	.16**	1					
MC11	.21**	.11**	.39**	.22**	.12**	.13**	.25**	.20**	.45**	.24**	1				
MC12	.29**	.09*	.25**	.13**	.23**	.19**	.22**	.16**	.11*	.31**	.14**	1			
MC13	.11**	.15**	.22**	.03	.13**	.11*	.17**	.09*	.19**	.13**	.17**	.23**	1		
MC14	.10*	.24**	.23**	.25**	.10*	.20**	.14**	.26**	.27**	.16**	.16**	.18**	.16**	1	
MC15	.04	.29**	.30**	.42**	.08	.27**	.14**	.16**	.39**	.09*	.21**	.11*	.20**	.36**	1

	MC16	MC17	MC18	MC19	MC20	MC21	MC22	MC23	MC24	MC25	MC26	MC27	MC28	MC29	MC30
MC16	1														
MC17	.01	1													
MC18	.31**	.22**	1												
MC19	.22**	.00	.30**	1											
MC20	.22**	.08	.27**	.24**	1										
MC21	.06	.20**	.18**	.13**	.21**	1									
MC22	.07	.20***	.14**	.05	.27**	.23**	1								
MC23	.25**	.03	.26**	.42**	.21**	.16**	.16**	1							
MC24	.00	.36**	.24**	.11*	.09*	.16**	.29**	.14**	1						
MC25	.09*	.21**	.18**	.12**	.15**	.20**	.22**	.16**	.24**	1					
MC26	-.02	.46**	.08	-.07	.12**	.19**	.27**	.01	.34**	.26**	1				
MC27	.04	.28**	.13**	.08	.15**	.25**	.24**	.15**	.26**	.29**	.26**	1			
MC28	.23**	.11*	.27**	.34**	.24**	.21**	.19**	.36**	.17**	.18**	.09*	.22**	1		
MC29	.03	.41**	.15**	.05	.22**	.29**	.22**	.10*	.34**	.27**	.43**	.32**	.21**	1	
MC30	.38**	.07	.30**	.24**	.24**	.23**	.11*	.25**	.12**	.15**	.03	.13**	.34**	.15**	1

*Note. *p< .05, **p < .01, ***p< .001*

Results revealed that all items were positively significantly correlated with each other. Except MC1 was non-significantly correlated with MC4, MC15 and MC26. MC2 was non-significantly correlated with MC5, MC 7, MC 10, MC 18, MC 19, MC 23, MC 24 and MC28.

To ensure the factor structure and dimensionality of instrument twenty retained items were factor analyzed through confirmatory factor analysis using AMOS-21. Multiple indices were used to assess adequacy of Fit for each model (Tabachnick & Fidell, 1997). These indices were chosen based on their frequent use in the CFA literature and for their suitability in model comparison (Kelloway, 1998). In the current study various indices and criteria were used to describe the best model fit including CFI, GFI, RMSEA and TLI as they were commonly reported once in recent literature (Mc Donald & Ringo Ho, 2002). The criterion followed for the interpretation of these indices is as root mean square error of approximation (RMSEA $\leq .05$) given by Bentler (1990) and Browne and Cudeck (1993); Goodness of-Fit-Index (GFI > .90) by Joreskog and Sorborn (1989), Normed fit index (NFI > .90) Bentler and Bonett (1980), and Comparative fit index (CFI > .90) by Bentler (1990).

The GFI and CFI are normed indexes, with lower bounds of zero and increasing toward unity with improved fit of the model. The TLI is a non-normed index with a lower bound of zero, and can attain values greater than one. Similar to the GFI and CFI, higher values of the TLI indicate improved fit. The RMSEA is an evaluation statistic that is relatively unaffected by sample size, and is suitable for assessing models of differing complexity (Browne & Cudeck, 1993). The $\chi 2$ goodness-of-fit statistic was computed for each model to allow the assessment of competing models if any existed. As the analyses were of a first-order CFA nature, t values for the parameters (parameter estimates relative to their standard errors of estimate; Byrne, 1988) were examined to determine if any items had non-significant loadings on their respective factors, and standardized parameter estimates were also examined. For all models, unless otherwise noted, items were allowed to load on a single latent factor only, errors were uncorrelated, and the factors were allowed to co-vary.

Table 4.2

Goodness-of-Fit Statistics for Tested Models

Model	χ2	Df	χ2/df	RMSEA	CFI	TLI	GFI	RMR
Default	743.134	384	1.935	.043	.893	.879	.911	.061
Independent	3798.749	435	8.733	.124	.000	.000	.436	.215
Saturated	.000	0	-----	-----	1.000	-----	1.000	.000

Note. *χ2 = Chi-Square, df= Degree of Freedom, RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index, TLI = Tucker–Lewis fit index, GFI = Goodness of Fit index, RMR = Root Mean Square Residual.*

30 items were analyzed through confirmatory factor analysis using Structural Equation modeling (using AMOS 21). For determining the best model fit, a different criteria was used which included CFI, GFI, TLI and RMSEA. The indices were interpreted as comparative Fit Index (CFI>.90), Tucker-Lewis Index (TLI>.95) and Root Mean Square Error of Approximation (RMSEA<.05).

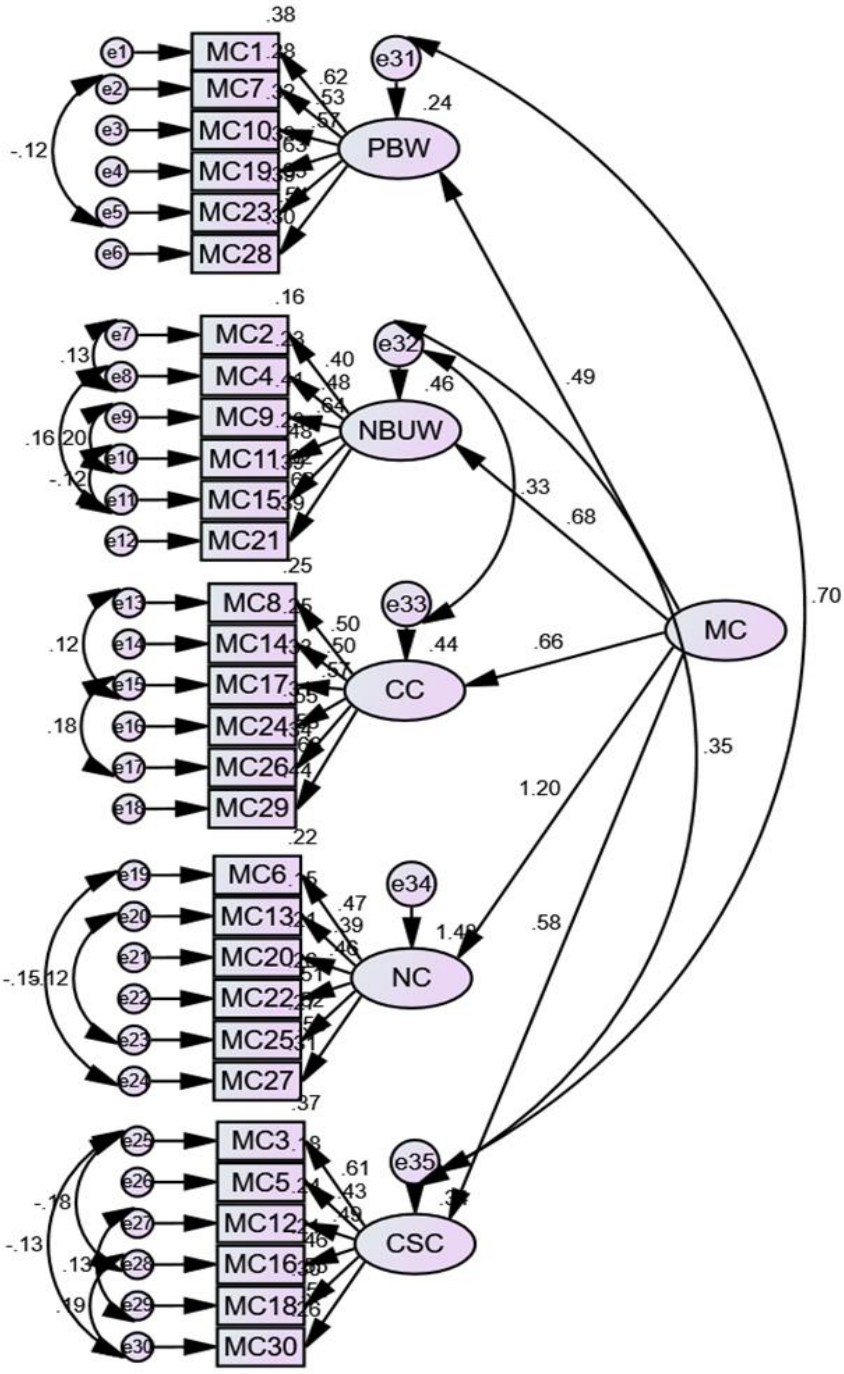

Figure 4.1: Model obtained through CFA for Metacognition Scale

Confirmatory factor analysis (CFA) was run in order to determine the factor structure and dimensionality of metacognition scale. The factor structure emerged after CFA analysis of Urdu version of MCQ-30 was almost the same as of the English version of MCQ-30 and the scale showed high internal validity and significant inter-item correlations.

Pearson product movement correlation was carried out to find out convergent and discriminant validity of Meta cognition questionnaire (MCQ-30). For convergent validity correlation was conducted with Anxious thought inventory and for discriminant validity correlation was conducted with Well-being scale. Results are shown in tables 4.3 & 4.4.

Table 4.3

Correlation Between Metacognition and Anxious Thoughts Inventory Examining Convergent Validity (N=503)

	Variables	1	2	3	4	5	6	7	8
	Metacognition	-	-	-	-	-	-	-	-
1	POSBW	-	.27***	.22***	.45***	.59***	.25***	.25***	.20***
2	NEGBW		-	.44***	.53***	.38***	.54***	.42***	64***
3	COGC			-	.52***	.25***	.45***	.38***	.41***
4	NEEDFC				-	.46***	.44***	.34***	.44***
5	COGSC					-	.28***	.28***	.32***
	Anxiety	-	-	-	-	-	-	-	-
6	SOCWT							.52***	.74***
7	PHYHWT							-	.51***
8	METAWT								-

*Note. ***p< .00, POSWB= Positive Beliefs about Worry, NEGWB= Negative Beliefs about Worry, COGC= Cognitive Confidence, NEEDFC= Need for Control, COGSC= Cognitive Self-Consciousness, SOCWT= Social Worry, PHYHWT= Physical Health Worry, METAWT= Meta-worry, NEGWB= Negative Well-being, ENE= Energy, POSWB= Positive Well-being*

The results showed that all metacognition questionnaire subscales have significant positive correlations with all subscales of anxious thought inventory demonstrating that metacognition questionnaire has reasonably high convergent validity.

Table 4.4

Correlation Between Metacognition and Well-being Scale Examining Divergent Validity (N=503)

	Variables	1	2	3	4	5	6	7	8
	Metacognition	-	-	-	-	-	-	-	-
1	POSBW	-	.27***	.22***	.45***	.59***	-.01	.10*	.14***
2	NEGBW		-	.44***	.53***	.38***	-.45***	-.36***	-.29***
3	COGC			-	.52***	.25***	-.31***	-.24***	-.15***
4	NEEDFC				-	.46***	-.28***	-.17***	-.06
5	COGSC					-	-.11*	.03	.07
	Well-being	-	-	-	-	-	-	-	-
6	NEGWB							.51***	.22***
7	ENE							-	.43***
8	POSWB								-

*Note. *p< .05, **p < .01, ***p< .001, POSWB= Positive Beliefs about Worry, NEGWB= Negative Beliefs about Worry, COGC= Cognitive Confidence, NEEDFC= Need for Control, COGSC= Cognitive Self-Consciousness, SOCWT= Social Worry, PHYHWT= Physical Health Worry, METAWT= Meta-worry, NEGWB= Negative Well-being, ENE= Energy, POSWB= Positive Well-being*

The results showed that overall subscales of metacognition questionnaire have high significant negative relationship with all subscales of well-being scales, thus demonstrating high discriminant validity of metacognition questionnaire.

Table 4.5

Cronbach Alpha and Descriptive Statistics of Metacognition, Anxious Thoughts and Well-being Scale (N=503)

Variables	*K*	*M(SD)*	*Range*		α
			Actual	*Potential*	
Metacognition	-	-			-
POSBW	6	15.07(4.07)	6-24	6-24	.75
NEGBW	6	13.42(3.94)	6-23	6-23	.72
COGC	6	12.65(4.17)	6-23	6-23	.74
NEEDFC	6	14.21(2.95)	6-22	6-22	.74
COGSC	6	15.73(3.74)	6-24	6-24	.68
Anxious Thoughts	-	-			-
SOCWT	9	18.95(5.06)	9-36	9-36	.75
PHYHWT	6	11.90(3.11)	6-23	6-23	.52
METAWT	7	15.23(3.11)	7-28	7-28	.76
Well-being	-	-			-
NEGWB	4	7.77(3.43)	0-12	0-12	.80
ENE	3	7.14(2.64)	0-12	0-12	.48
POSWB	4	7.59 (3.12)	0-12	0-12	.74

Note. k= number of items, M= Mean, SD= Standard Deviation, a= Cronbach Alpha POSWB= Positive Beliefs about Worry, NEGWB= Negative Beliefs about Worry, COGC= Cognitive Confidence, NEEDFC= Need for Control, COGSC= Cognitive Self-Consciousness, SOCWT= Social Worry, PHYHWT= Physical Health Worry, METAWT= Meta-worry, NEGWB= Negative Well-being, ENE= Energy, POSWB= Positive Well-being

Cronbach Alpha of Metacognition, anxious thoughts and well-being showed good reliability except for Physical health worry subscale of Anxious Thoughts and Energy subscale of well-being scale.

Correlation was conducted with Metacognition, Anxious Thoughts Inventory and Well-being. Results are shown in Table 4.6.

Table 4.6

Correlation among Metacognition, Anxious Thoughts Inventory, and Well-being

Variable	1	2	3
1. Metacognition	-	.61***	-.33***
2. Anxious Thought Inventory		-	-.25***
3. Well-being			-

Note: *=*p<.05*, **= *p<.01*, ***= *p<.001*

Convergent Validity of MCQ-30 Urdu

The value of Average Variance Extracted (AVE) was found .53 therefore, convergent validity may be assumed. To get assurance about convergent validity, the correlation between Metacognition and Anxious Thoughts was conducted. The results of Pearson Product Moment Correlation revealed significant positive relationship between Metacognition and Anxious Though Inventory scores ($r = .61$, $p<.000$).

Divergent Validity of MCQ-30

To verify divergent validity, the correlation between Metacognition and Well-Being was conducted. The results of Pearson Product Moment Correlation revealed significant negative correlation between above mentioned variables ($r =-.33$; $p<.000$).

Summary of Findings

- Pearson product moment correlation revealed that subscales of metacognition questionnaire have shown a positive correlation with the subscales of anxious thought inventory. Concluding that metacognition has reasonably high convergent validity.
- Pearson product moment correlation revealed that subscales of metacognition questionnaire have shown a negative correlation with the subscales of well-being. Concluding that metacognition has reasonably high divergent validity.
- The factor structure emerged after CFA analysis of Urdu version of MCQ-30 was of the same factors as it was of English version of MCQ-30 and the scale showed high internal validity and the inter-item correlations were selectively significant. Therefore, the Urdu version of metacognitive questionnaire can now be considered as a valid tool to use in Pakistan.

Chapter V

Discussion

The current study examined Validation of Urdu version of Metacognition Questionnaire. The discussion of this study is conferred in the light of pervious literature and theoretical background.

Metacognition is considered as the key factor in the development of rational thoughts and their better understanding in performing tasks. It can also be defined as awareness and instruction of one's cognitive activities in learning capabilities (Veenman, 2006). Firstly, Pearson product movement correlation was carried out to find the relationship between two variables Metacognition and Anxious Thoughts. Results revealed that positive belief was positively significantly correlated with negative belief, cognitive confidence, need for control, cognitive self-consciousness, social worry, physical health and meta-worry. Moreover negative belief was positively significantly correlated with cognitive confidence, need for control, cognitive self-consciousness, social worry, physical health and meta-worry. In a study it was revealed that meta-worry and self-consciousness were correlated moderately and were positively associated with the symptoms of worry and obsessional thoughts. The results also suggested that meta-worry is a crucial factor to understand the extrusive and intrusive thought patterns (Gwendoljn, Erric, & Peter, 2005)

Cognitive confidence was positively significantly correlated with need for control, cognitive self-consciousness, social worry, physical health and meta-worry. Need for control was positively significantly correlated with cognitive self-consciousness, social worry, physical health and meta-worry. Cognitive self-consciousness was positively significantly correlated with social worry, physical health and meta-worry. Various researchers have shed light on revealing

intrusive and extrusive thought patterns such as worry and obsessions. In a research it was evident to claim that cognitive self-consciousness plays a key role in the development of obsessive-compulsive disorder from other anxious patients (Janeck, Riemann, & Heffelfinger, 2003).

Furthermore, results showed that social worry was positively significantly correlated with well-being and meta-worry. Well-being was positively significantly correlated with meta-worry. A most prominent feature of anxiety disorder is worry. At a very young age children starts to develop worry. A study revealed that social anxiety disorder was found to be prevalent at different age groups. The results indicated that worry was significantly correlated with worry in both children and adolescents. Social anxiety disorder was significantly correlated with worry in both age groups whereas; symptoms of social anxiety disorder were only significantly correlated with worry in young adolescents (Rabner, 2016).

Secondly, Pearson product movement correlation was carried out to find the relationship between metacognition and well-being. The results showed that positive belief was positively significantly correlated with negative belief, cognitive confidence, need for control, cognitive self-consciousness and positive well-being and negatively significantly correlated with poor well-being and energy. Research evidence also reports gender differences in psychological well-being among individuals.

Negative belief was positively significantly correlated with cognitive confidence, need for control and cognitive self-consciousness and negatively significantly correlated with negative well-being, energy and positive well-being. A study conducted by Agus, Rossetti, Peena and Maria (2012) indicated that depression, desirability, cognitive functioning as significant

predictors of well-being. However, effect of age and gender was significant on depression and meta-memory.

Cognitive confidence was positively significantly correlated with need for control and cognitive self-consciousness and negatively significantly correlated with negative well-being, energy and positive well-being. Various researches have supported the link of demographics and other environmental aspects with contentment and well-being. In a demographic research done by Campbell & Rodgers (1976) investigated that the following features reported the inconsistency of psychological well-being less than 20%. However, some other researchers have found that there are some demographic variables that consistently predict psychological well-being (Suhail & Chaudry, 2004). The results from another study showed a significant positive relationship between psychological well-being and components of metacognition. On the contrary, a significant negative relationship was found between psychological well-being and problem solving in students (Hamid & Asghar, 2013).

Need for control was positively significantly correlated with cognitive self-consciousness and negatively significantly correlated with negative well-being, energy and positive well-being. Cognitive self-consciousness was negatively significantly correlated with negative well-being. A study revealed that personal control, trust and approach avoidance style in problem solving; self-monitoring and awareness were the significant predictors of psychological well-being among students. The students who were completely aware of their mental thought processes in finding hindrance to learning problems and assigned tasks were confident in problem solving. They used less avoidant style, had positive psychological well-being and adaptability in coping with assigned tasks and concerned problems (Maryam, 2013).

MCQ-30 subscales were positively correlated with anxious thoughts and negatively correlated with well-being. Positive belief subscale showed a strong relationship with anxious thoughts suggesting that individuals who have a belief that worry is a useful coping strategy tends to use it to face anxiety provoking situations or thoughts (Spada et al, 2008) whereas, subscales of MCQ-30 have negative significant correlation with well-being. MCQ-30 inter-item correlation results revealed that all items were positively significantly correlated with each other except for few was non-significantly correlated with other items of the Metacognition scale.

Convergent validity was assessed by correlating metacognition questionnaire and anxious thoughts. The results revealed positive significant correlation between metacognition and anxious thoughts inventory. The factors correlated positively which clearly indicates that subscales of metacognition with worry related items positively correlated with subscales showing meta-worry and negative beliefs about worry of anxious thoughts inventory.

The results of a study conducted by Sheikh and colleagues showed that anxious patients had greater metacognitive beliefs and higher distress and there was a significant difference in comparison to depressed patients and non-patients participants. Furthermore, the results showed a positive significant correlation between metacognitive beliefs and worry in anxious patients and normal healthful participants. However, among depressed patients it showed non- significant correlation. They concluded that metacognitive beliefs are meticulously linked to worry specifically in anxious patients (Sheikh, Saadat, Sarabandi, et al., 2012). Another study revealed that meta-worry and self-consciousness were correlated moderately. Moreover, the constructs were also positively associated with the symptoms of worry and obsessional thoughts. Thinking about self-consciousness and meta-worry were significantly correlated. The results implicated

that to understand excessive, intrusive thought patterns; meta-worry plays an important role as compared to monitoring an individual's thought processes (Gwendoljn, Erric & Peter, 2005).

Divergent validity was assessed by correlating metacognition questionnaire and well-being. The results revealed negative significant correlation between metacognition and well-being. The factors correlated negatively which clearly indicates that subscales of metacognition with negative beliefs about worry and related items showed a negative correlation with subscales showing positive beliefs about worry of well-being scale. A study showed that depression, desirability, cognitive functioning as significant predictors of well-being. However, effect of age and gender was significant on depression and metacognition (Maria, Peena, Rossetti & Agus, (2012). Another study conducted in Iran revealed that results showed a significant positive relationship between psychological well-being and components of metacognition. On the contrary, a significant negative relationship was found between psychological well-being and problem solving in students. It also revealed that personal control, trust and approach avoidance style in problem solving; self-monitoring and awareness were the significant predictors of psychological well-being among students. The students who were completely aware of their mental thought processes in finding hindrance to learning problems and assigned tasks were confident in problem solving (Asghar & Maryam, 2013).

Confirmatory factor analysis (CFA) was done in order to determine the factor and structure, dimensionality of metacognition scale and its validity of Pakistani university students. An assessment of a range of fit indices suggests a good fit with a five factor model, although it was not a complete agreement amongst the fit indices in the confirmatory factor analysis.

The results revealed that the MCQ-30 has a high internal validity and the inter-item correlations were selectively significant. Furthermore, factor analysis revealed that Urdu version

of MCQ-30 has almost the same factor structure as the English version. Results also revealed that the total variance of MCQ-30's factor is 89.3 % as compared to the original study that was a higher rate (68%). The reliability test of MCQ-30 indicated that the reliability coefficients vary among the questionnaire's items, inter-item correlations ranged from .40 to .44 and the results are consistent. The results suggest that Urdu version of MCQ-30 is a reliable and valid measure for use with Pakistani sample. Results gathered from a research also indicate that metacognition can be a predictor of worry related thoughts and their need to control those thoughts (Wells, 1997).

MCQ-30 was also validated on Turkish university students. Construct validity of metacognition questionnaire was assessed which reported that the Turkish version of MCQ-30 consisted of 5 components which represents the same factor structure of initial MCQ-30. For further extension, the fit indices of CFA implied an acceptable fit to a 5-factor model consistent with the original MCQ-30. The Turkish MCQ-30 resulted in good test re-test reliability, internal consistency and convergent validity. It also showed significant positive relationship between subscales of MCQ-30. Other measure of anxiety and obsessive-compulsive symptoms in addition further supported the convergent validity of the Turkish version. Moreover, the results of the psychometric properties of the Turkish version of MCQ-30 showed the instrument a valuable additional tool for the assessment of metacognition in Turkey (Ahmet & Metehan, 2008).

Another study was conducted to examine the psychometric properties of Spanish adaptation of the MCQ-30 on a sample of Spanish Nationals. Confirmatory factor analysis revealed the five-factor structure which found to be invariant across gender. Internal consistency and test re-test reliability of the subscales were satisfactory. Theoretically expected relationships among meta-worry, pathological worry, suppression of thoughts and trait anxiety were attained. The

study also revealed the convergent validity with other measures of beliefs about worry. The results concluded that Spanish version of MCQ-30 is a valid instrument for Spanish speaking population for evaluating metacognitive beliefs (Cejudo, Vindel & Jose, 2013).

5.1 Conclusion

In conclusion, the results from the current study indicated that the Urdu version of MCQ-30 has shown satisfactory psychometric properties. Recent studies have highlighted the role of metacognition in GAD, OCD, PTSD and other clinical samples (Wells, Fisher & Myers 2005). It seems that metacognitive beliefs play an important role in the development of anxious thoughts. The results also suggests that the Metacognition questionnaire's subscales mainly assessed that worry related thoughts have positive relationship with positive consequences, such as finding an efficient way of dealing with situations and finding solutions to them. It was also found out that metacognitive thinking helps the person to critically evaluate and develops and increased control over negative thoughts which in return also prevents from negative consequences.

5.2 Limitations and Suggestions

- Sample size taken in the current study was sufficient; however it was taken only from one city i.e. capital city of Punjab. A representative sample taken from other provinces such as Sindh, Khyber Pakhtunkhwa Baluchistan Baltistan and Azad Kashmir could help revamp the psychometric properties of the scale for further research.
- The target population for the research consists of students only whereas; individuals belonging to various professions and different walks of life should also be included for further research.

- The study provides evidence of the validation of Urdu version of MCQ-30. It is a practical instrument useful for assessing a range of metacognitive beliefs that are crucial in explaining positive and negative beliefs and anxious thoughts.
- Further researches should be done to explore its utility in clinical and cross-cultural settings.

5.3 Implications of the Findings

The current research is unique in the validation of the Urdu version of Metacognition questionnaire in our own culture. The Urdu version of the scale can further be used for indigenous studies in Pakistan as it can be easily applied in our own cultural context. This tool is useful for assessing a wide spectrum of metacognitive beliefs in Pakistani population which will help the researchers to understand the pathological processes of individuals. This study has wide implications to find out the metacognitive abilities and to understand the patterns of critical thinking and evaluation of their own perceived knowledge. It is beneficial in a way to plan strategies to learn in a better way and control their worried thoughts. The study can be used to create awareness to develop metacognitive thoughts and to meet challenges controlling their negative beliefs.

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APPENDICES

APPENDIX-A

Permission by Authors of the Scales

FW: CB937 Urdu Pakistan WBQ12 licence complete

Inbox ×

Janet Bayfield <janetb@healthpsychologyresearch.com>
to me

Hello Anum

Further to yesterday's email, I am now pleased to attach a 'for use' copy of the W-BQ12 in Urdu for Pakistan and the full user guidelines.

Best wishes, I hope that all goes well!
Janet

Mrs Janet Bayfield
Administrator,
HPR Ltd

Please note that I work part-time (2 days per week) and will respond to emails as soon as possible.

From: Janet Bayfield
Sent: 19 June 2019 16:08
To: ANUM WAHID <f2017238004@umt.edu.pk>; Rukhsana Saddul <rukhsana.saddul@gmail.com>
Subject: RE: CB937 Urdu Pakistan WBQ12 licence

Dear Anum and Professor Rukhsana

Thank you both for signing the licence agreement – it is such a shame that it proved to be so difficult but I am pleased that all is now complete.
I will be back in the office tomorrow and so will be able to send Anum the 'for use' questionnaire and full user guidelines.

Best Wishes
Janet

Mrs Janet Bayfield
Administrator
HPR Ltd
janetb@healthpsychologyresearch.com

Adrian Wells <adrian.wells@manchester.ac.uk>
to me

Dear Anum,

I hereby grant permission for you to use the MCQ-30 in your study.

kind regards

Adrian

Adrian Wells, Ph.D
Professor of Clinical and Experimental Psychopathology
University of Manchester
School of Psychological Sciences
Section of Clinical and Health Psychology
Rawnsley Building
MRI
Manchester
M13 9WL

From: ANUM WAHID [f2017238004@umt.edu.pk]
Sent: 24 January 2019 17:29
To: Adrian Wells
Subject: Permission to use "The Meta-Cognition Questionnaire "

•••

Adrian Wells <adrian.wells@manchester.ac.uk> Apr 9, 2019, 9:31 PM

to me

Dear Anum,

I hereby grant permission for you to use the Positive Beliefs about Rumination Scale and the Anxious Thoughts Inventory in your research. Please note that this permission is not transferable and you must the site the original authors and source of these measures on any translated instruments.

good luck with your studies.

kind regards

Adrian

Adrian Wells, Ph.D
Professor of Clinical and Experimental Psychopathology
University of Manchester
School of Psychological Sciences
Section of Clinical and Health Psychology
Rawnsley Building
MRI
Manchester
M13 9WL

APPENDIX-B

Participant Information Sheet

تحقیق شرکت کنندگان کیلئے معلوماتی شیٹ

میں Anum Wahid، یونیورسٹی آف مینجمنٹ اینڈ ٹیکنالوجی، لاہور میں نفسیات کی تربیت لے رہی ہوں ۔ یہ ریسرچ میرے تحقیقی مقالہ (Thesis) کا حصہ ہے جس کا عنوان "Validation of Urdu Version of Metacognition Questionnaire" ہے۔آپ کااس تحقق میں حصہ لینے سے پہلے یہ جاننا ضروری ہے کہ یہ تحقیق کیوں کی جارہی ہے اور اس میں آپ کو کیا کرنا ہوگا۔براہ مہربانی ذیل میں دی گئی معلومات کو غور سے پڑھیں۔

تحقیق کا مقصد

1۔اس تحقیق کا مقصد

Validation of Urdu Version of Metacognition Questionnaire ہے۔

2۔اس مقصد کو پورا کرنے کے لیے کچھ سوالنامے ترتیب دیئے گئے ہیں جو آپ کو دیئے جائیں گے ان کی مدد سے معلومات فراہم کرنی ہیں۔حاصل کردہ معلومات کو باقی شرکت کنندگان کی معلومات کے ساتھ ملا کر استعمال کیا جائے گا۔

3۔ان معلومات کا تجزیہ شماریاتی کمپیوٹر کے پروگرام کی مدد سے کیا جائے گا جس میں کسی بھی شرکت کنندہ کی شناخت ظاہر نہیں ہو گی۔

4۔تمام شرکت کنندگان کی فراہم کردہ معلومات کا اکٹھے اور علیحدہ بھی تجزیہ کیا جاسکتا ہے لیکن اس سے آپ کو کسی قسم کی پریشانی کا سامنا نہیں کرنا پڑے گا۔

حقوق

یہ آپ کی مرضی پر منحصر ہے کہ آپ

1۔اس تحقیق میں شامل ہوں

2۔سوالنامہ میں موجود کسی سوال کا جواب نہ دیں

3۔ہمیں بغیر وجہ بتائے اس تحقیق سے کسی بھی وقت دستبردار بھی ہو جائیں

4۔ہم آپ سے حاصل کی جانے والی معلومات کو صیغہ راز میں رکھنے کے پابند ہیں مگر آپ کی بہتری یا کسی قسم کی رہنمائی کے لیے اگر یہ معلومات آپ کو درکار ہوں تو آپ تحقیق کنندہ سے رابطہ کر سکتے ہیں۔

5۔ہماری پوری کوشش ہو گی کہ آپ کو اس تحقیق کی وجہ سے کسی بھی ذہنی دباؤ یا پریشانی کا سامنا نہ کرنا پڑے اگر ایسا ہوتا ہے تو آپ ہمیں فوراً مطلع کریں تاکہ آپ کو مناسب پیشہ ورانہ رہنمائی اور مشاورت فراہم کی جائے جس کے لیے آپ کو کوئی فیس ادا نہیں کرنی پڑے گی۔

رابطہ کے لیے ایڈریس

سپروائزر

Dr. Ruksana Kausar

سٹوڈنٹ

Anum Wahid

F2017238004

ان تمام معلومات کو سمجھنے کے بعد اس تحقیق میں شمولیت کا فیصلہ آپ کے ہاتھ میں ہے اگر آپ اس معلوماتی شیٹ کو سمجھتے ہوئے اس تحقیق میں حصہ لینا چاہتے ہیں تو برائے مہربانی شیٹ نمبر کو پُر کرکے دستخط کر دیجئے۔ آپکے قیمتی وقت اور تعاون کے لیے ہم آپ کے بے حد شکر گزار ہیں

APPENDIX-C

Consent Form

تحقیق کنندہ کا نام: Anum Wahid

سپروائزر کا نام: Dr. Ruksana Kausar

میں تصدیق کرتا/کرتی ہوں کہ مجھے موجودہ ریسرچ/تحقیق جس کا عنوان "Questionnaire Validation of Urdu version of Metacognition" کے مقاصد اور نوعیت سے آگاہ کر دیا گیا ہے۔

	ہاں	نہیں
1. مجھے اس بات کا علم ہے کہ ریسرچ میں شمولیت کے لیے میرا کچھ وقت صرف ہوگا۔	☐	☐
2. مجھے آگاہ کر دیا گیا ہے کہ حاصل کردہ معلومات کو صیغہ راز میں رکھا جائے گا اور میرا نام اس ریسرچ میں ہر گز شامل نہیں ہوگا۔	☐	☐
3. مجھے آگاہ کر دیا گیا ہے کہ مجھ سے حاصل کردہ معلومات صرف تحقیقی مقاصد کے لیے استعمال ہوں گی جس میں میری شناخت کا استعمال نہیں کیا جائے گا۔	☐	☐
4. یہ میری صوابدید پر ہے کہ میں اپنے متعلق معلومات حاصل کرنا چاہوں تو تحقیق کنندہ کی ذمہ داری ہو گی کہ وہ مجھے اس کے متعلق آگاہ کریں۔	☐	☐
5. میں جس وقت چاہوں اس ریسرچ میں شمولیت سے دستبردار ہو سکتا/سکتی ہوں۔	☐	☐
6. میری کوشش ہو گی کہ درست اور مکمل معلومات فراہم کی جائیں۔	☐	☐
7. تمام فراہم کردہ معلومات کو سمجھتے ہوئے میں اس تحقیق میں شامل ہونے کے لیے رضامند ہوں۔	☐	☐

تحقیق کنندہ کے دستخط_____**تاریخ**_____

شرکت کنندہ کے دستخط_____ **تاریخ**_____

APPENDIX-D

Demographic Information Sheet

ذاتی کوائف نامہ

APPENDIX-E

Metacognition Questionnaire

خیالی ادراک کا سوالنامہ

ہدایات:

ہمیں ان عقائد میں دلچسپی ہے جو لوگ اپنی سوچ کے بارے میں رکھتے ہیں. برائے مہربانی ہر بیان کو غور سے پڑھیے اور مناسب جواب کی نشاندہی کرتے ہوے بتایئے کہ آپ عمومی طور پر اس سے کتنا متفق ہیں. برائے مہربانی تمام بیانات کا جواب دیں، کوئی صحیح یا غلط جوابات نہیں ہیں.

Sr. no	بیانات	متفق نہیں	تھوڑا سا متفق	درمیانہ متفق	بہت زیادہ متفق
1	فکر کرنا مستقبل میں مسائل سے بچنے میں میری مدد کرتا ہے.	1	2	3	4
2	میرا فکر کرنا میرے لیے خطرناک ہے.	1	2	3	4
3	میں اپنے خیالات کے بارے میں بہت زیادہ سوچتا/سوچتی ہوں.	1	2	3	4
4	میں فکر کرنے سے خود کو بیمار کر سکتا/سکتی ہوں.	1	2	3	4
5	جب میں ایک مسئلے کے حل کے بارے میں سوچ رہا ہوتا/ہوتی ہوں تو مجھے پتہ ہوتا ہے کہ میرا ذہن کس طریقے سے کام کرتا ہے.	1	2	3	4
6	اگر میں نے ایک پریشان کن سوچ پر قابو نہیں پایا اور پھر وہ دوبارہ آئی تو یہ میرا قصور ہوگا۔	1	2	3	4
7	منظم رہنے کے لیے مجھے فکر کرنے کی ضرورت ہے.	1	2	3	4
8	الفاظ اور ناموں کے لیے اپنی یاداشت پر مجھے بہت کم اعتماد ہے.	1	2	3	4
9	چاہے میں کتنا بھی روکنے کی کوشش کروں، میری پریشان کن سوچیں آتی رہتی ہیں۔	1	2	3	4
10	فکر کرنا ذہن میں چیزوں کو سلجھانے میں میری مدد کرتا ہے.	1	2	3	4
11	میں اپنے پریشان کن خیالات کو نظرانداز نہیں کر سکتا/سکتی.	1	2	3	4
12	میں اپنے خیالات کی نگرانی کرتا/کرتی ہوں.	1	2	3	4
13	مجھے ہر وقت اپنے خیالات کے قابو میں ہونا چاہیے.	1	2	3	4
14	بعض اوقات میری یاداشت مجھے گمراہ کر سکتی ہے.	1	2	3	4
15	میرا فکر کرنا مجھے پاگل کر سکتا ہے.	1	2	3	4
16	میں مسلسل اپنی سوچ سے آگاہ ہوں.	1	2	3	4
17	میری یاداشت کمزور ہے.	1	2	3	4
18	میں اپنے ذہن کے کام کرنے کے طریقے پر گہری توجہ دیتا/دیتی ہوں.	1	2	3	4

		متفق نہیں	تھوڑا سا متفق	درمیانہ متفق	بہت زیادہ متفق
19	فکر کرنا مجھے نبٹنے میں مدد دیتا ہے.	1	2	3	4
20	اپنے خیالات پر قابو نہ پا سکنا، کمزوری کی علامت ہے.	1	2	3	4
21	جب میں فکر کرنا شروع کرتا/کرتی ہوں تو میں اسے روک نہیں سکتا/سکتی.	1	2	3	4
22	کچھ مخصوص سوچوں کو قابو نہ کرنے پر مجھے سزا ملے گی.	1	2	3	4
23	فکر کرنا مجھے مسائل حل کرنے میں مدد دیتا ہے.	1	2	3	4
24	جگہوں کے لیے یاداشت پر مجھے بہت کم اعتماد ہے.	1	2	3	4
25	کچھ مخصوص سوچوں کے بارے میں خیال آنا بُرا ہے۔	1	2	3	4
26	مجھے اپنی یاداشت پر اعتماد نہیں ہے.	1	2	3	4
27	اگر میں اپنی سوچوں پر قابو نہ پا سکا/سکی تو میں کام کرنے کے قابل نہیں رہوں گا/گی.	1	2	3	4
28	اچھی طرح سے کام کرنے کے لئے مجھے فکر کرنے کی ضرورت ہے.	1	2	3	4
29	مجھے کاموں کے لیے اپنی یاداشت پر بہت کم اعتماد ہے.	1	2	3	4
30	میں مسلسل اپنے خیالات کا جائزہ لیتا/لیتی ہوں.	1	2	3	4

APPENDIX-F

Well-Being Scale

صحت مند زندگی سے متعلق سوالنامہ (W-12BQ)

ہدایات:

برائے مہربانی ہر سکیل پر 3 (ہر وقت) سے 0 (بالکل نہیں) میں سے ایک عدد پر نشان لگائیں، یہ نشاندہی کرنے کے لئے کہ آپ نے کتنی دفعہ یہ محسوس کیا کہ ہر بیان نے پچھلے چند ہفتوں میں آپ کو متاثر کیا/آپ پر لاگو ہوا۔

Sr. no	بیانات	ہر وقت			بالکل نہیں
1	میں بار بار روتا/روتی ہوں یا میرا رونے کا دل کرتا ہے	3	2	1	0
2	میں بجھا بجھا اور غمزدہ محسوس کرتا/کرتی ہوں	3	2	1	0
3	میں بغیر کسی وجہ کے ڈرا ہوا محسوس کرتا/کرتی ہوں	3	2	1	0
4	میں آسانی سے پریشانی یا گھبراہٹ محسوس کرنے لگتا/لگتی ہوں	3	2	1	0
5	میں توانا، پھرتیلا اور مضبوط محسوس کرتا/کرتی ہوں	3	2	1	0
6	میں بے رنگ اور سُست محسوس کرتا/کرتی ہوں	3	2	1	0
7	میں تھکا ہوا، بے جان یا بدحال محسوس کرتا/کرتی ہوں	3	2	1	0
8	میں صبح تر و تازہ اور پُر سکون اُٹھتا/اُٹھتی رہی ہوں	3	2	1	0
9	میں اپنی ذاتی زندگی سے خوش، مطمئن یا راحت محسوس کرتا رہا/رہی ہوں	3	2	1	0
10	میں نے ویسی زندگی گزاری ہے جیسی کہ میں چاہتا/چاہتی تھی	3	2	1	0
11	میں نے اپنے روزمرہ کے کاموں یا نئے فیصلے کرنے میں پُر جوشی محسوس کی ہے	3	2	1	0
12	میں نے محسوس کیا ہے کہ میں اپنی زندگی میں آنے والے سنجیدہ مسائل اور بڑی تبدیلیوں سے باآسانی نمٹ سکتا/سکتی ہوں	3	2	1	0

برائے مہربانی اس بات کا یقین کر لیں کہ آپ نے 12 بیانات میں سے ہر ایک پر غور کیا ہے اور ہر بیان کے جواب میں سے کسی ایک عدد پر نشان لگائے ہیں۔

APPENDIX-G

Anxious Thoughts Inventory

تشویشناک سوچوں کا پیمانہ

ہدایات:

مندرجہ ذیل بیانات کو غور سے پڑھیں اور مناسب جواب کی نشاندہی کرتے ہوئے بتایئے کہ آپ عمومی طور پر اس سے کتنا متفق ہیں۔ برائے مہربانی تمام بیانات کا جواب دیں، کوئی صحیح یا غلط جواب نہیں ہے۔

Sr. no	بیانات	تقریباً کبھی نہیں	کبھی کبھار	اکثر اوقات	تقریباً ہمیشہ
1	میں اپنی ظاہری شکل وصورت کے بارے میں فکر کرتا/کرتی ہوں۔	1	2	3	4
2	مجھے لگتا ہے کہ میں ناکام ہوں۔	1	2	3	4
3	جب میں اپنے مستقبل کو دیکھوں تو اپنے ساتھ ہو سکنے والی مثبت چیزوں کی نسبت منفی چیزوں کے بارے میں زیادہ سوچتا/سوچتی ہوں۔	1	2	3	4
4	اگر میں کوئی غیر متوقع جسمانی علامت محسوس کروں تو میرا رجحان ہوتا ہے کہ میں اپنے ساتھ بدترین چیز ہونے کے بارے میں سوچتا/سوچتی ہوں۔	1	2	3	4
5	مجھے شدید بیمار ہو جانے کے خیالات آتے ہیں۔	1	2	3	4
6	مجھے اپنے ذہن کو بار بار آنے والے خیالات سے خالی کرنے میں مشکل پیش آتی ہے۔	1	2	3	4
7	مجھے دل کا دورہ یا کینسر/سرطان کے ہو جانے کے بارے میں فکر ہوتی ہے۔	1	2	3	4
8	جب میں اجنبیوں کے ساتھ ہوں تو مجھے پریشانی ہوتی ہے کہ میں کہیں کچھ غلط نہ بول دوں یا کچھ غلط نہ کر دوں۔	1	2	3	4
9	مجھے پریشانی ہوتی ہے کہ میری صلاحیتیں دوسروں کی امیدوں پر پورا نہیں اترتیں۔	1	2	3	4
10	میں اپنی جسمانی صحت کے بارے میں فکر مند رہتا/رہتی ہوں۔	1	2	3	4
11	میں فکر مند رہتا/رہتی ہوں کہ میرا اپنے خیالات پر اتنی اچھی طرح سے قابو نہیں ہے جیسا میں چاہتا/چاہتی ہوں۔	1	2	3	4
12	مجھے فکر رہتی ہے کہ لوگ مجھے پسند نہیں کرتے۔	1	2	3	4
13	میں اپنی ناکامیوں کو اتنا سنجیدگی سے لیتا/لیتی ہوں کہ انہیں ذہن سے نہیں نکال سکتا/سکتی۔	1	2	3	4
14	میں باآسانی شرمندہ ہو جاتا/جاتی ہوں۔	1	2	3	4
15	اگر مجھے کوئی معمولی بیماری بھی ہو جیسا کہ خراش وغیرہ تو میں اسے اس سے زیادہ سنجیدگی سے لیتا/لیتی ہوں جتنی کہ وہ حقیقت میں ہو۔	1	2	3	4
16	ناخوشگوار خیالات میرے ذہن میں میری مرضی کے خلاف آجاتے ہیں۔	1	2	3	4
17	میں اپنی ناکامیوں اور کمزوریوں کے بارے میں فکر کرتا/کرتی ہوں۔	1	2	3	4
18	مجھے فکر رہتی ہے کہ میں زندگی کے معاملات اتنی اچھی طرح سے نہیں نمٹا سکتا/سکتی جس طرح سے لگتا ہے کہ دوسرے نمٹایا کرتے ہیں۔	1	2	3	4
19	میں موت کے بارے میں فکر کرتا/کرتی ہوں۔	1	2	3	4
20	مجھے خود کا مزاق بننے کے بارے میں فکر ہوتی ہے۔	1	2	3	4

21	میرا خیال ہے کہ میرے بہت زیادہ پریشان ہونے کی وجہ سے میں زندگی میں بہت سی چیزیں نہیں کر پاتا/پاتی۔	1	2	3	4
22	مجھے بار بار ایک سے خیالات آتے ہیں جیسے کہ بار بار گنتی کرنا یا فقروں کا دہرانا۔	1	2	3	4

APPENDIX-H

Plagiarism Report

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