

Translation and Validation of Multidimensional Body Self-Relation Questionnaire-Appearance Scale for Young Adults

Irum Naqvi and Anila Kamal

Quaid-i-Azam University

Multidimensional Body Self-Relation Questionnaire-Appearance Scale (MBSRQ-AS; Cash, 2000) has been extensively used to study body image among adolescents and adults. Phase 1 of the present study aimed to translate and validate English version of MBSRQ-AS into Urdu language. Forward-backward translation method was used for this purpose. To establish the cross language validity, Urdu version and the original MBSRQ-AS English version were administered on bilinguals ($N = 200$) including an equal number of men and women with mean age of 22 years. Reliability of both versions was determined by computing test-retest techniques. Phase-II was aimed to establish the construct validity by applying Exploratory Factor Analysis on a sample of 350 college and university students including both men and women with age range of 17 to 21 years. Results showed the following four factors, that is, appearance evaluation, appearance orientation, body area satisfaction, and over-weight preoccupation as reflection of body image, indigenously. Phase-III of the research was aimed to confirm the factorial validity. The sample comprised of 500 adolescents including men and women with age range from 16 to 22 years from colleges and universities of Islamabad and Rawalpindi. Findings confirmed the four factor solution and suggested that MBSRQ-AS Urdu version can be used as a valid and reliable measure for the assessment of body image of young adults.

Keywords. Body image, appearance evaluation, appearance orientation, overweight preoccupation, body area satisfaction

Cash (2002) defined body dissatisfaction as a subjective evaluation and the affective component of the multi-dimensional construction of body image. Body dissatisfaction is currently a major health concern and is becoming the norm for children and adolescents.

Irum Naqvi and Anila Kamal, National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan.

Correspondence concerning this article should be addressed to Irum Naqvi, National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan. Email: irumnaqvi@nip.edu.pk

Cash and Pruzinsky (2002) highlighted the fact that body image scholars, increasingly agree that body image is a multidimensional phenomenon. Cognitive information-processing model for body image (as it is usually assessed) is one type of cognitive bias that stems from a self-schema that includes memory stores related to body size/shape and eating that are easily activated and readily accessible for retrieval from memory. This self-schema is presumed to draw the person's attention to body and food-related stimuli and to bias interpretations of self-relevant events in favor of fatness interpretations. This model postulates that disturbed body images are one type of cognitive bias that is most similar to selective interpretational biases: Individuals come to a conclusion based upon the evidence, but the conclusion is the one that is not shared by most people (Williamson, Stewart, White, & Crowe, 2002).

The model assumes that cognitive biases occur without conscious awareness and that the person experiences the cognition as real. Model hypothesizes that certain types of stimuli are more likely to determine cognitive bias in susceptible people; such as body- or food-related information; ambiguous stimuli; and tasks that require self-reflection. Most body size estimation tasks, questionnaires, and naturally occurring situations that trigger body image reactions have these stimulus characteristics. Stimuli with these characteristics are hypothesized to activate the self-schema related to body size/shape and eating. People who are most susceptible to cognitive biases related to body image are hypothesized to have the characteristics of fear of fatness, over concern with body size/shape, internalization of a thin ideal size/shape, and perfectionism/obsessionality.

Williamson et al. (2002) highlighted that in normal-weight or underweight people, who are very concerned about body/size shape, a variety of cognitive biases, including body image disturbances, are present. Information-processing theories of body image hypothesize that people who are obsessed with body size/shape are most likely to misinterpret body-related information in regard to self. Most studies have instructed participants to think about the experimental stimuli in terms of relevance to self as opposed to others. Cognitive biases and body image disturbances are more likely to be observed in response to ambiguous stimuli/situations. Body image assessment typically involves projecting one's visual self-image upon an ambiguous representation of that image, such as a small silhouette or a measure of width that reflects the size of a body area (e.g., thigh or abdomen). Research shows that women with eating disorders and/or high levels of preoccupation with body size have a cognitive bias for body-related interpretations of ambiguous stimuli.

Cognitive biases and body image disturbances in people who are overly concerned with body size/shape are a specific response to stimuli that are body or eating-related. Tests of this content specificity hypothesis have compared control stimuli that were unrelated to body size/shape, such as concerns about health, with stimuli that have content specifically related to body size/shape or eating. In general, the results of these studies have supported this hypothesis (Williamson et al., 2002).

Early adolescence is an important period for the development of body image, especially for girls. For girls and boys a number of normative developmental challenges influence, and are influenced by, body image, including pubertal development, emerging sexuality, incipient identity formation, gender role intensification, and exploring realistic possibilities for success in various realms (Whitbourne & Skultety, 2002). In general, this transition is more stressful for girls than boys because girls confront more of these demands (e.g., pubertal weight gains, dating, the move to middle school) simultaneously or in rapid sequence. Additionally, girls as a group experience more limited options for success in careers and in sports, more threatening sexual harassment and abuse, and other reminders of lower status.

All these experiences increase insecurity, limit confidence, and increase a girl's tendency to define herself in terms of the social and economic value of her body. Girls' development through the stages of puberty in early adolescence is associated with increased body mass, a more negative body image, and higher levels of drive for thinness and dieting. Pubertal timing, however, does not consistently correlate with body dissatisfaction, nor has it been shown to consistently predict negative body image in middle or late adolescence (Whitbourne & Skultety, 2002). With respect to the impact of synchronous stressors, girls who begin middle school, begin puberty early, and begin dating during the same year report more body dissatisfaction at the time. Furthermore, this disadvantage increases over the middle school period (ages 11-14 years). A significant minority of girls enters the pubertal transition with weight and shape concerns, an investment in thinness as an important part of beauty and health, and a history of experimenting with dieting. Developmental psychologists have shown that the pubertal transition accentuates previously existing vulnerabilities and problems.

Research shows that there are clear gender differentials in access to health care. Upon entering puberty, adolescent girls face more difficulty in accessing health care than adolescent boys (Bearinger, Sieving, Ferguson, & Sharma, 2007). Limitations on female mobility particularly affected younger women under age 25 years studied in

rural Punjab, even if they were married (Sathar & Kazi, 2000). Unmarried girls in that province faced the most restrictions on their overall mobility, including access to health services, due to social norms enforcing segregation between the sexes as a means of preserving a girl's chastity, or honor (Khan & Kraemer, 2009).

There is far less research on the development of body image in adolescent boys, and this research is inconsistent as to the impact of pubertal timing. Overall it appears that the timing of puberty does not have a strong or lasting effect on boys' body image. More research is needed on body image as a function of actual and perceived pubertal development, gender, and ethnicity (Steinberg & Morris, 2001). Interestingly Siegel, Yancey, Aneshensel, and Schuler (1999) have found that white girls who perceived themselves as early developers felt less positive about their bodies, whereas there was no relationship between white boys' perceived timing and their body image. On the other hand, black girls and black boys who perceived themselves as late developers had a more negative body image (Whitbourne & Skultety, 2002).

Cash and Smolak (2011) regard body image as a multidimensional construct. In the English-language area, many self-report measures are available for the investigation of different aspects of body image. While, the other measures concentrate on only some specific aspects of body image, the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Cash, 2000) has the advantage of assessing multiple aspects of body image and being a widely used instrument in the English-language area. The MBSRQ is able to differentiate between the evaluation of appearance-related aspects and the person's orientation toward these aspects (i.e., the perceived importance of appearance and its influence on the person's behavior). Another advantage of the MBSRQ is that, after nine subscales were originally developed on a conceptual basis, those subscales that could be statistically confirmed by several split-sample principal component analyses were retained (Brown, Cash, & Mikulka, 1990). Subsequently, concordance analyses revealed considerable stability of the components both within and between sexes (Brown et al., 1990). The MBSRQ-AS has already been translated into French (Untas, Koleck, Rasclé, & Borteyrou, 2009) and German languages (Vossbeck-Elsebuscha et al., 2014).

The MBSRQ's subscales reflect two dispositional dimensions, that is, evaluation and cognitive-behavioral orientation on each of the three somatic domains of appearance, fitness, and health/illness (Brown et al., 1990). Most body-image researchers are principally interested in the appearance related subscales of the MBSRQ and wish

to administer a shorter questionnaire that excludes the fitness and health items. The MBSRQ-AS has been employed in large number of studies of body image in Pakistan (e.g., Ambreen & Hassan, 2005; Ishfaq, 2007; Tariq & Ijaz, 2015; Nigar, 2014; Zaman, 2014; Zubair, 2008). This scale has been used in the last few years in Pakistan with a wide variety of adolescents and adult population having the different demographic characteristics. All the above mentioned studies included sample with certain level of education that can comprehend English language. Reliability evidences from studies in Pakistan show lower reliabilities for scales as Zaman (2014) reported reliability of .34 for appearance orientation; .38 for appearance evaluation; .69 for overweight pre-occupation; while, Zubair (2008) reported .61 for appearance evaluation; .58 for overweight pre-occupation; .62 for self-classified weight, and .68 for body area satisfaction. Nigar (2014) reported lower reliability for appearance evaluation (.68) and appearance orientation (.65). The reported psychometrics of MBRSQ in above mentioned studies are also indicating poor reliabilities especially for appearance evaluation, appearance orientation, and self-classified weight raising question on its factor structure for credible use in Pakistani culture.

Well keeping in mind its utility and poor psychometric characteristics, there is dire need to translate and have Urdu version of MBSRQ-AS for Pakistani population, so it can be applied on diverse group of population to better understand English language written items and to validate existing factor structure indigenously. First of all the permission to use and translate the scale was obtained from the author (Cash in March, 2013). The major objectives were firstly, to translate the MBSRQ-AS. Secondly, to establish the cross language validation and test-retest reliability of MBSRQ-AS. Thirdly, to assess the factorial structure (Exploratory Factor Analyses and Confirmatory Factor Analysis) of Urdu Version of MBSRQ-AS. Finally, to evaluate the internal consistency of Urdu version of MBSRQ-AS in terms of Cronbach's alpha coefficients.

Method

This study was constituted of three phases. In phase I, translation and cross language validation was done. In phase II, the psychometric properties of the scale were established by Exploratory Factor Analysis. In phase III, the Confirmatory Factor Analysis was done.

Instrument

Multidimensional Body-Self Relations Questionnaire-Appearance Scale. Cash (2000) developed this scale to use with adults and adolescents (15 years or older) for the assessment of their attitude toward body image. The MBSRQ-AS constituted 34-item with five subscales; namely, Appearance Evaluation, Appearance Orientation, Body Area Satisfaction, Overweight Preoccupation, and Self-Classified Weight. The scoring options for items 1 to 22 ranged from 1 (*definitely disagree*) to 5 (*definitely agree*); while, item number 23 is scored as 1 (*never*), 2 (*rarely*), 3 (*sometimes*), 4 (*often*), 5 (*very often*). Item no. 24 and 25 are scored from 1 (*very underweight*) to 5 (*very overweight*); while, items no. 26 to 34 could be responded from 1 (*dissatisfied*) to 5 (*satisfied*). The 7 items in Appearance Evaluation are 3, 5, 9, 12, 15, 18, and 19 with score range 7-35. The 12 items in Appearance Orientation are 1, 2, 6, 7, 10, 11, 13, 14, 16, 17, 20, and 21 with score range 12-60. The 9 items in Body Area Satisfaction are 26, 27, 28, 29, 30, 31, 32, 33, and 34 with score range 9-45. The 4 items in Overweight Preoccupation are 4, 8, 22, and 23 with score range 4-20 and 2 items in Self-Classified Weight are 24 and 25 with score range 2-10. Following items are reversed scored, that is, 11, 14, 16, 18, 19, and 20 (Cash, 2000).

Phase I: Translation and Cross Language Validation of MBSRQ-AS

Translation and cross language validation of MBSRQ-AS has been accomplished by forward and back translation procedure. For the translation and adaptation of MBSRQ-AS, the original scale was given to six bilingual experts. Translators were asked to consider the issues of gender and age applicability and adapt each item according to the Pakistani culture, without eliminating the items. Best translations were selected in the committee approach comprised two lecturers of psychology and the researcher herself.

Each translated item was analyzed and best translated items were selected by the mutual consensus of committee members. At the end of this process, the translated version of MBSRQ-AS was ready for back translation. Using the same approach that outlined in the forward translation, the instrument was translated back to English by the independent bilingual experts. The back translations of the Urdu version and original MBSRQ-AS were scrutinized by the same bilingual experts. The final back translation was sent to the original

author (Thomas F. Cash). Based on author's suggestion, translated version undergone some necessary changes with respect to grammar and translated version was again sent to author for review for approval and agreement.

Sample. For the cross language validation the sample of 200 university students with age ranged from 18 - 21 years ($M = 19.55$; $SD = 1.41$) including men ($n = 100$) and women ($n = 100$). Sample was selected from Quaid-i-Azam University, Islamabad ($n = 120$) and National University of Science and technology ($n = 80$). These university students have the proper comprehension of both languages that is, Urdu and English.

Procedure. The whole sample was divided into four groups. In the first trial two groups comprising of 100 university students, 50 in each group were given the original inventory of MBSRQ-AS and their responses were taken. Similarly, the other two groups of 100 students were given the translated version of MBSRQ-AS and their responses were taken. In the second trial after the fifteen days the same hundred students were contacted to made their responses again, but in the second trial the first group of 50 students were given Urdu version of MBSRQ-AS with the same instructions and the second group of 50 students were given again the original MBSRQ-AS. Regarding the last two groups, they were given original inventory of MBSRQ-AS and second group was given translated version of MBSRQ-AS. This exercise was geared to identify the point of equivalence or discrepancy between Urdu and English version of the scale. Participants were randomly assigned to the four groups: Urdu-Urdu retest, Urdu-English retest, English-Urdu retest, and English-English retest. They were all requested to give their responses with the same instructions. These groups were made to control the experiences of learning effect that may took place due to administration of Urdu and English tests on two weeks apart retesting.

Results. In order to determine cross-language validity and test-retest reliability of the inventory, correlation coefficients of four groups between the scores of two administrations has been carried out. Moreover, the following results also represent the comparisons of retest reliability with original MBSRQ-AS retest scores with one month interval.

Table 1
Retest reliabilities of Urdu and English versions of MBSRQ-AS (N = 200)

MBSRQ-AS	<i>n</i>	<i>r</i>
MBSRQ-AS (Urdu-Urdu)	50	.89**
MBSRQ-AS (Urdu-English)	50	.85**
MBSRQ-AS (English-Urdu)	50	.82**
MBSRQ-AS (English-English)	50	.80**

* $p \leq .05$. ** $p \leq .01$.

Table 1 shows test-retest of the four groups (Urdu-Urdu, Urdu-English, English-Urdu, and English-English) correlations of MBSRQ-AS are positive and significant. The correlation coefficients for four groups ranged from .80 to .89 which indicates high stability of all subscales over time, as well as cross language validity of the Urdu and English versions. Among the all four groups' correlation value of Urdu-Urdu retest group is higher as compared to other three groups. The reason for this higher correlation value may because of the practice effect in the twice administration of same language inventory. Overall, these results indicate the strong evidence of cross language validity or empirical equivalence of the original and translated versions of MBSRQ-AS. Moreover, the results also provide the evidence that both tests are hypothetically similar.

Comparison of original English and Urdu versions of MBSRQ-AS. Moreover the test-retest reliability and the cross language validity of the five sub-scales is also determined by calculating correlations between two administrations.

Table 2
Retest Reliabilities of Urdu and English Version of Five Subscales of MBSRQ-AS (N = 200)

MBSRQ-AS Subscales	Group I (UU) (<i>n</i> = 50)	Group II (UE) (<i>n</i> = 50)	Group III (EU) (<i>n</i> = 50)	Group IV (EE) (<i>n</i> = 50)
Appearance Evaluation	.89**	.87**	.86**	.84**
Appearance Orientation	.88**	.85**	.83**	.81**
Body Area Satisfaction	.90**	.86**	.85**	.82**
Overweight Preoccupation	.92**	.90**	.90**	.89**
Self-Classified Weight	.89**	.87**	.86**	.83**

Note. UU = Urdu-Urdu; UE = Urdu-English; EU = English-Urdu; EE = English-English

* $p \leq .05$. ** $p \leq .01$

Table 2 shows that four groups (Urdu-Urdu retest, Urdu-English retest, English-Urdu retest and English-English retest) correlations for the four subscales of MBSRQ-AS are positive and significant. The correlation coefficient of Appearance Evaluation for four groups ranged from .84 to .89, for Appearance Orientation correlation coefficient for four groups ranged from .81 to .88, for Body Area Satisfaction correlation coefficient ranged from .82 to .90, for Overweight Preoccupation correlation coefficients ranged from .89 to .92 and for Self-Classified Weight correlation coefficient ranged from .83 to .89 which indicates high stability of responses over the time, as well as cross language validity of the Urdu and English versions. Among the all the four groups' correlation value of each sub scale and total of Urdu-Urdu retest is higher as compared to other three groups. The reason for the higher correlation value may be the practice effect of the same language inventory administration.

Phase II: Exploratory Factor Analysis of Urdu Version MBSRQ-AS Scale

Sample. In order to determine the further psychometric properties of the scale, MBSRQ-AS Urdu version was administered on the independent sample of 350 college and university students including boys ($n = 135$) and girls ($n = 215$). All the students were of age range 17 to 21 years ($M = 19.12$; $SD = 1.86$).

Procedure. The scale was administered individually. The participants were approached at their academic institutions. Authority permission was sought from the head of the institutions and students were approached in their class rooms, they were instructed to read each statement carefully and respond honestly. In case of any difficulty they were assisted by the researcher to answer on scale. Few subjects have problems in understanding of statements so they were explained by the researcher till a real answer was obtained.

Results. This scale is translated for the very first time in Urdu language. EFA was applied to investigate its factorial structure to verify the existence of construct is same for Pakistani population as it exist for western society. At the first step the correlation matrix for all 34 items was generated and it was found all the items showed item total correlation at least .30 and above and is provide the justification for sensible factorability (Field, 2009). Secondly, Bartlett's test of

sphericity was significant ($\chi^2 = 2384.744, p = .000$) indicating sample from population has equal variance and items has enough common variance suitable for factor analysis. Thirdly, the Kaiser-Meyer-Olkin Measure of sampling adequacy was .80 which is sufficiently high as value ranges from 0 to 1. The value of .80 suggests that data is good for factor analysis. Fourthly, the communalities for all 34 items were found to be above .3 supported this idea that each item shares some common variance with each other. Communalities represent the proportion of common variance in a variable. Variable that has no specific variance would have a communality of 1; a variable that shares none of its variance with any other variable would have the communality of 0 (Thongrattana, 2012). These all findings justified the decision of factor analyses for MBSRQ-AS. On the basis of all the above considerate facts the factor analysis was applied on all 34 items of MBSRQ-AS for factor analysis. Principal axis factoring was used as an extraction method as it help to identify the factorial structure by using maximum likelihood method.

Table 3 depicts the results of Principal Axis Factoring by using maximum likelihood Method to determine the factor structure and construct validity of MBSRQ-AS. It is clear from the results, that most of the items fall on four factors by using varimax rotation method. The main criterion of selection of final items was factor loading of .40 and above as followed by Brown, Cash, and Mikula (1990) in the development of Body Self-Relational Questionnaire scale. Multiple factor solution was explored within mind the .40 and above factor loading. 3, 4, 5, and 7 factor solutions were applied to find the best solution. Four factor solutions was considered best as this solution was found closer to factor solution of original one.

Results in Table 3 show the communalities of mostly items are more than .5 except items no. 13 and 16 which is the evidence of less specific variance among variables. Moreover, result indicated that the factor 1 has an Eigen value of 6 and explain 19.92% of the total variance; Factor 2 has an Eigen value of 4.07 and explains 11.99% variance. While factor 3 has Eigen values of 3.50, and explain 10.31%, of the total variance and actor 4 has Eigen values of 2.86, and explain 5.47%, of the total variance.

Table 3

Factor Loadings of MBSRQ-AS through Principal Axis Factoring by using Maximum Likelihood Method (N = 350)

Serial No.	Item No.	BAS	AO	AE	OP	h^2
1	22	.87	.02	.03	-.08	.86
2	21	.85	.06	-.06	-.07	.74
3	24	.81	-.04	.02	.09	.71
4	23	.81	.00	.01	-.02	.71
5	27	.71	.23	.03	-.02	.70
6	25	.67	-.16	.08	-.07	.67
7	26	.60	-.01	.05	.02	.54
8	19	.53	.04	.09	.11	.70
9	20	.53	-.10	.08	-.05	.60
10	1	-.09	.73	.20	.32	.60
11	2	.00	.72	.19	-.06	.66
12	9	-.11	.70	.08	.12	.68
13	7	.05	.64	-.08	.03	.40
14	6	-.02	.60	.16	.02	.55
15	14	.04	.52	.30	.09	.59
16	10	-.05	.42	.27	.13	.48
17	12	-.09	.42	-.12	-.16	.55
18	13	-.16	.41	.08	.03	.56
19	11	.02	.40	.09	.14	.58
20	3	.08	-.00	.70	-.14	.71
21	15	.03	-.21	.65	-.53	.56
22	16	.17	-.04	.60	.04	.52
23	8	-.05	.17	.54	.15	.62
24	5	-.02	.29	.42	.12	.54
25	4	-.09	.28	-.15	.57	.52
26	17	-.01	.26	.27	.51	.70
27	18	-.04	.05	.14	.43	.74
Eigen Values	6.776	4.077	3.508	2.862		
% of Variance	19.929	11.992	10.317	5.475		
Cumulative %	19.929	31.921	42.237	47.712		

Note. AE = Appearance Evaluation; AO = Appearance Orientation; BAS = Body Area Satisfaction; OP = Overweight Preoccupation. Factor Loadings > 0.40 have been reported in bold in each factor.

Table 3 show that total variance explained by four factors is 47.71. Finally, 27 items were retained in four factors. First factor was Body Area Satisfaction included 9 items (26, 27, 28, 29, 30, 31, 32, 33, and 34). Factor 2 Appearance Orientation comprising 10 items (1, 2, 6, 7, 10, 11, 13, 14, 16, and 17). Factor 3 is Appearance Evaluation comprising 5 items (3, 5, 9, 18, 19), and factor 4 was the Overweight Preoccupation consists of three items (4, 23, and 24). Items no. 12 and

15 had not been loaded on Appearance Evaluation Subscale and not loaded any of desired four factors. Similarly, items no. 20 and 21 for Appearance Orientation and item no. 8 for Overweight Preoccupation have not been loaded on these four factors. Moreover, subscale of Self-Classified Scale comprising two items 24 and 25 have not been retained in any of above stated factor solution. So, EFA results show the four factors present indigenously for the construct of MBSRQ-AS and Vossbeck-Elsebusch et al. (2014) also confirm this four factors of MBSRQ-AS. Here, we can see the issue of poor reliabilities of existing studies in Pakistan might be the result of its poor indigenous relevance with respect to factor structure which has been dealt well in the present research.

Psychometric properties of MBSRQ-AS Urdu version. In order to establish the psychometric properties of MBSRQ-AS Urdu version, alpha reliability coefficients were calculated for each subscale.

Table 4

Means, Standard Deviations, Alpha Reliability Coefficients, and Correlation between subscales of MBSRQ-AS Urdu Version (N = 350)

Variables	Item No.	<i>M</i>	<i>SD</i>	<i>α</i>	AE	AO	BAS	OP
AE	5	21.03	4.28	.75	–	.58**	.26**	-.25**
AO	10	39.94	8.01	.80		–	.25**	.27**
BAS	9	32.55	8.27	.80			–	-.27**
OP	3	10.46	3.78	.76				–

Note. AE = Appearance Evaluation; AO = Appearance Orientation; BAS = Body Area Satisfaction; OP = Overweight Preoccupation.

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

Table 4 indicates the alpha coefficient for the 26 items of MBSRQ-AS subscales. Alpha reliability coefficients also measure the underlying factor or construct of the scale. The alpha coefficient ranged from .75 (Appearance Evaluation), .80 (Appearance Orientation), .80 (Body Area Satisfaction), and .76 (Overweight Preoccupation). These high alpha coefficient values connote both the scales are internally consistent and reliable measures to assess the underlying constructs. Results in Table 4 show the interscale correlation of MBSRQ-AS. As results, indicated that appearance evaluation is positively related with appearance orientation, body area satisfaction, and negatively related with overweight pre-occupation. Similarly, appearance orientation show positive relation with body area satisfaction and overweight preoccupation. Body area satisfaction is negatively related with overweight pre-occupation.

Phase III: Confirmatory Factor Analysis of Urdu Version MBSRQ-AS Scale

For establishing factorial validity of Multidimensional Body Self-Relation Questionnaire confirmatory factor analysis technique was applied. All the model path diagrams were established using AMOS graphics and analyses were computed to estimate the chi-square value and fit indices. Standardized regression weights were identified considering the same as were the criteria for EFA for MBSRQ-AS (Cash, 2000) is .40.

Sample. A sample of 500 adolescents including boys ($n = 227$) and girls ($n = 273$). The data was collected from colleges and universities of Islamabad and Rawalpindi. The age ranges from 16 to 22 years ($M = 17.19$; $SD = 3.45$) with the education of F.A ($n = 236$) and B.A/B.Sc/ B.S ($n = 264$). A purposive sampling technique was used to collect the data from the sample.

Results. The factorial structure of MBSRQ-AS Urdu version was assessed with the help of Confirmatory Factor Analysis (CFA).

Table 5
Factor Loadings (Standardized Regression Weights) for Four Factors of MBSRQ-AS Urdu Version (N = 500)

Item No.	Factor Loadings	Item No.	Factor Loadings	Item No.	Factor Loadings
Appearance Evaluation		11	.49	32	.53
3	.68	13	.48	33	.63
5	.58	14	.46	34	.71
9	.66	16	.50	Overweight Preoccup.	
18	.49	17	.52	4	.60
19	.45	Body Area Satisfaction		22	.78
Appearance Orientation		26	.61	23	.86
1	.72	27	.55		
2	.78	28	.83		
6	.64	29	.83		
7	.54	30	.76		
10	.71	31	.63		

Note. Preoccup. = Preoccupation

Table 5 depicted the Table 5 showed the standardized regression weights or factor loadings for all 27 items of MBSRQ-AS Urdu version. As the result indicated most of the items showed factor

loading $> .40$ in each factor which was the selection criteria of items in the development of scale. Furthermore, model yielded acceptable fit indices, that is, value of Comparative Fit Index = .90, Non-Normed Fit Index = .90, Tucker Lewis Index = .89, Root Mean Square Error of Approximation = .04, Standardized Root Mean Square Residual = .05 with nonsignificant p value. Results are consistent with findings present in the literature (Brown et al., 1990; Vossbeck-Elsebusch et al., 2014).

Discussion

Translating and adapting western measures from one culture to another is a sensitive issue (Cheung & Cheung, 2003). The increase in diverse populations worldwide and the need for cross-cultural and multinational research indicate a great need for clinicians and researchers to have access to reliable and valid instruments or measures cross-validated among diverse cultural segments of the population and/or in other languages (Sousa & Rojjanasirrat, 2011).

Keeping in mind the benefits of translated measures in the present study, cultural equivalence of MBSRQ-AS was established with the help of independent back translation and committee approach after taking the permission to use this inventory from author. In phase I, translation and cross language validation was also established. To see the empirical equivalence of the both versions of the instrument, they were administered to different groups of subjects of bilinguals and monolinguals. The retest reliability is one of the most important features of an objective personality inventory. The administration of inventory on bilinguals was with different sequence. However, it was found that the correlation of Urdu-Urdu retest is higher as compared to Urdu-English retest, English-Urdu retest and English-English retest. There can be many reasons for this result but the important one is language barrier.

As mentioned earlier MBSRQ-AS has been translated in many different languages, for example Untas et al. (2009) translated and validated in French language and Vossbeck-Elsebusch et al. (2014) validated in Greek language and increased its utility in these cultures. Cross language validation was done with sample of university students who were bilinguals. Results of cross language validation confirm the assumption that Urdu translated version has more consistent results as compared to English version. Stability of reliabilities on all subscales of MBSRQ-AS Urdu version is the sign of better language comprehension among Pakistani population.

In the next step construct validation of Urdu version was done through exploratory factor analysis. A sample of 350 adolescents was collected on Urdu translated version and EFA with the help of Principal Axis Factoring by using maximum likelihood Method was applied to determine the factor structure and construct validity of MBSRQ-AS. Items were retained based on factor loading of .40 and above as followed by Brown et al. (1990) in the development of BSRQ scale. Finally 27 items were retained in four factors explaining 47.71 of total variance; while, 5 items were dropped from the original scale due to poor cultural relevance. First factor was Body Area Satisfaction (9 items), factor 2 was Appearance Orientation (10 items), factor 3 was Appearance Evaluation (5 items), and factor 4 was the Overweight Preoccupation (3 items). So, EFA results show the four factors present indigenously for the construct of body self-relation questionnaire and Vossbeck-Elsebusch et al. (2014) also confirm this four factors of MBSRQ-AS.

Four factor solutions was unique to existing literature as two factor solution, that is, appearance evaluation and appearance orientation are consistent with the findings of Brown et al. (1990) and Untas et al. (2009). Cash (2000) emphasized body area satisfaction and overweight pre-occupation are related to body image and this four factor solution was later confirmed by Vossbeck-Elsebusch et al. (2014). Results of present study showed the same four factors present indigenously for the construct of body self-relation questionnaire.

In the present study, psychometric properties of MBSRQ-AS were established by computing alpha reliabilities. Reliability coefficients for subscales for appearance evaluation, appearance orientation, body area satisfaction, and overweight pre-occupation were adequate and satisfactory depicting these subscales as dependable measure of the said constructs. The reliabilities are good and confirm the idea that MBSRQ-AS Urdu Version is a reliable measure and results are found consistent with existing literature (Cash, 2000; Cash & Pruzinsky, 2002; Nigar, 2014; Tariq & Ijaz, 2015).

The inter scale correlation was determined to check the relationship between different subscales of MBSRQ-AS Urdu version. The inter scale correlation between appearance evaluation and appearance orientation and body area satisfaction is positive and negatively related with overweight pre-occupation. Negative relationship is indicating these two constructs are at opposite continuum. Similarly, there is positive relationship between appearance orientation and body area satisfaction. Body area satisfaction is negatively related with overweight pre-occupation.

Results are found same as in the existing literature (Cash & Deagle, 1997; Smith & Rieger, 2006; Vossbeck-Elsebusch et al., 2014).

Ayodele (2012) explained construct validity comprises two elements namely, convergent validity and discriminant validity. The popularity of fit-index research can be seen by the number of indexes that exist and consumers peruse research studies for an understanding of which indexes appear to work well with different samples sizes, types of data, and ranges of acceptable scores to decide whether a good fit exists (Hu & Bentler, 1999; Tang et al., 2010). In reference to model fit, researchers (DiStefano, Zhu, & Mîndrilă, 2009; Hu & Bentler, 1999; Westen & Rosenthal, 2003) use numerous goodness-of-fit indicators to assess a model. The popularity of fit-index research can be seen by the number of indexes that exist. In general, the authors prefer the Tucker Lewis Index, Comparative Fit Index, and Root Mean Square Error Approximation for one-time analyses (Harrington, 2009). The results in the present research are well supported by the above mentioned facts about fit indices so the measurement models provide the accuracy of confirmatory factor analyses for MBSRQ-AS Urdu version.

Meade (2008) discussed the excessive sensitivity of the chi-square statistic with large samples has been known for some time, which rapidly gave rise to the development of several approximate fit indices (AFIs) in order to better index the extent to which models approximately fit the data (Steiger, 2007). Many of these AFIs are derived from the same fit function used to calculate the chi-square statistic (e.g., Comparative Fit Index, Incremental Fit Index, Non-normed Fit Index, Tucker Lewis Index), while other index average discrepancy between reproduced and observed correlations (e.g., Root Mean Square Residual). Excellent overviews of the AFIs are available in the existent literature (e.g., Barrett, 2007; Hu & Bentler, 1999; Meade, 2008).

Root mean square error of approximation (RMSEA) tests the extent to which the model fits reasonably well in the population. It is sensitive to model complexity, but unlike the model chi-square, it is relatively insensitive to sample size. Close fit indicates the probability that RMSEA is less than or equal to .05 (Harrington, 2009). The Comparative Fit Index (CFI) is equal to the discrepancy function adjusted for sample size. CFI ranges from 0 to 1 with a larger value indicating better model fit. Acceptable model fit is indicated by a CFI value of .90 or greater (Hu & Bentler, 1999). Root Mean Square Error of Approximation (RMSEA) is related to residual in the model. RMSEA values range from 0 to 1 with a smaller RMSEA value indicating better model fit. Acceptable model fit is indicated by an

RMSEA value of .06 or less (Hu & Bentler, 1999). If model fit is acceptable, the parameter estimates are examined. The ratio of each parameter estimate to its standard error (SRMR) is distributed as a z statistic and is significant at the .05 level if its value exceeds 1.96 and at the .01 level if its value exceeds 2.56 (Hoyle, 1995). Unstandardized parameter estimates retain scaling information of variables and can only be interpreted with reference to the scales of the variables. Standardized parameter estimates are transformations of unstandardized estimates that remove scaling and can be used for informal comparisons of parameters throughout the model. Standardized estimates correspond to effect-size estimates.

Limitations and Suggestions

There are few inherent drawbacks of the present study. For instance, structural and functional equivalence of few items in translation may get affected so that they may have not retained in EFA. Moreover, gender is important contributing factor in concept of body image so while exploring the indigenous factor structure EFA can be separately applied for boys and girls sample. In addition, sample has been collected from the twin cities of Islamabad/Rawalpindi so the generalizability of findings are limited with reference to EFA.

Implications

The present research has the contribution in the field of health psychology to indigenize the concept of body image and its assessment. Present research provides us the insight of factors define body image. Psychometric strength of the scale has been developed by using exploratory and confirmatory factor analysis techniques.

Conclusion

On the basis of overall results it could be held that MBSRQ-AS has been translated and the cross language validity of the inventory has been established which is satisfactory. Moreover, the factor structure was explored with the help of EFA, four factors were retained in EFA for indigenous population and later on they are confirmed in phase III. As the results indicated the scale is providing sufficient evidence of validities so it can be concluded that scales have been assessed with respect to their psychometric properties for revised Urdu version were found satisfactory.

References

- Ambreen, M., & Hassan, A. (2005). *Relationship between body image and self-esteem in male and female university students* (Unpublished master's thesis). Behavioral Sciences Department, Fatima Jinnah Women University, Rawalpindi.
- Aspen, V., Darcy, A. M., & Lock, J. (2013). A review of attention biases in women with eating disorders. *Cognition and Emotion, 27*(5), 820-838.
- Ayodele, O. J. (2012). Validity and reliability Issues in educational research. *Journal of Educational and Social Research, 2*(2), 391-400. doi:10.5901/jesr.2012.v 2n2.391.
- Barrett, P. (2007). Structural equation modeling: Adjudging model fit. *Personality and Individual Differences, 42*, 815-824. doi:10.1016/j.paid.2006.09.018
- Bearinger, L. H., Sieving, R. E., Ferguson, J., & Sharma, V. (2007). Global perspectives on the sexual and reproductive health of adolescents: patterns, prevention, and potential. *The Lancet, 369*(9568), 1220-1231.
- Brown, T. A., Cash, T. F., & Mikulka, P. J. (1990). Attitudinal body-image assessment: Factor analysis of the Body Self-Relations Questionnaire. *Journal of Personality Assessment, 55*, 135-144.
- Cash, T. F. (2000). *The users' manuals for the Multidimensional Body-Self Relations Questionnaire, Situational Inventory*. Retrieved from <http://www.body-images.com>.
- Cash, T. F. (2002). Cognitive-behavioral perspectives on body image. In T. F., Cash & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp. 38-46). New York: Guilford Publications, Inc.
- Cash, T. F., & Deagle, E. A. (1997). The nature and extent of bodyimage disturbances in anorexia nervosa and bulimia nervosa: A metaanalysis. *International Journal of Eating Disorders, 22*(2), 107-126.
- Cash, T. F., & Pruzinsky, T. (2002). Future challenges for body image theory, research and clinical practice. In: T. F. Cash & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp. 509-516). New York: Guilford Press.
- Cash, T. F., & Smolak, L. (Eds.). (2011). *Body image: A handbook of science, practice, and prevention*. New York: Guilford Press.
- Cheung, F. M., & Cheung, S. F. (2003). Measuring personality and values across cultures: Imported versus indigenous measures. In W. J. Lonner, D. L. Dinnel, S. A. Hayes, & D. N. Sattler (Eds.), *Online readings in psychology and culture* (Vol. 6). Center for Cross-Cultural Research, Western Washington University, Bellingham, USA.
- Chen, H., & Jackson, T. (2005). Are cognitive biases associated with body image concerns similar between cultures? *Body Image, 2*(2), 177-186.

- DiStefano, C., Zhu, M., & Mindrilă, D. (2009). Understanding and using factor scores: Considerations for the applied researcher. *Practical Assessment, Research and Evaluation, 14*(20), 77-81.
- Field, A. P. (2009). *Discovering statistics using SPSS* (3rd ed.). London: Sage.
- Harrington, D. (2009). *Confirmatory factor analysis*. New York: Oxford University Press.
- Hoyle, R. H. (1995). The structural equation modeling approach: Basic concepts and fundamental issues. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications*, (pp. 1-15). Thousand Oaks, CA: Sage Publications.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.
- Ishfaq, N. (2007). *Relationship between body image and self-assertiveness in adolescent's girls* (Unpublished M.Sc Research Report). National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan.
- Jaeger, R. A. (2012). *Eating attitudes and behaviors in males engaging in or attracted to same sex sexual behaviors*. North Carolina State University, USA.
- Khan, M. M., & Kraemer, A. (2009). Factors associated with being underweight, overweight, and obese among ever-married non-pregnant urban women in Bangladesh. *Singapore Medical Journal, 50*(8), 804-814.
- Meade, A. W. (2008). *Power of AFI's to detect CFA model misfit*. Paper presented in 23rd Annual Conference of the Society for Industrial and Organizational Psychology, San Francisco, USA.
- Menzel, J. E., Schaefer, L. M., Burke, N. L., Mayhew, L. L., Brannick, M. T., & Thompson, J. K. (2010). Appearance-related teasing, body dissatisfaction, and disordered eating: A meta-analysis. *Body image, 7*(4), 261-270.
- Nigar, A. (2014). *Body dissatisfaction, perfectionism, and media exposure among adolescents* (Unpublished master's thesis). National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan.
- Perry, B. D., & Szalavitz, M. (2017). *The boy who was raised as a dog and other stories from a child psychiatrist's notebook--what traumatized children can teach us about loss, love, and healing*. Philadelphia: Basic Books.
- Sathar, Z. A., & Kazi, S. (2000). Women's autonomy in the context of rural Pakistan. *The Pakistan Development Review, 39*(2) 89-110.
- Siegel, J. M., Yancey, A. K., Aneshensel, C. S., & Schuler, R. (1999). Body image, perceived pubertal timing, and adolescent mental health. *Journal of Adolescent Health, 25*(2), 155-165.

- Smith, E., & Rieger, E. (2006). The effect of attentional bias toward shape and weight related information on body dissatisfaction. *International Journal of Eating Disorders, 39*(6), 509-515.
- Sousa, V. D., & Rojjanasirirat, W. (2011). Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: A clear and user-friendly guideline. *Journal of Evaluation in Clinical Practice, 17*, 268-274. doi:10.1111/j.1365-2753.2010.01434.x
- Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual Differences, 42*, 893-898.
- Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology, 52*(1), 83-110.
- Tang, J., Yu, Y., Du, Y., Ma, Y., Zhu, H., & Liu, Z. (2010). Association between actual weight status, perceived weight and depressive, anxious symptoms in Chinese adolescents: A cross-sectional study. *BioMed Central Public Health, 10*(1), 594. doi: 10.1186/1471-2458-10-594
- Tariq, M., & Ijaz, T. (2015). Development of Body Dissatisfaction Scale for university students. *Pakistan Journal of Psychological Research, 30*(2), 266-282.
- Thongrattana, P.T. (2012). *Analysis of the uncertainty factors affecting the sustainable supply of rice production in Thailand* (Unpublished doctoral dissertation). University of Wollongang, Thailand.
- Untas, A., Koleck, M., Rascle, N., & Borteyrou, X. (2009). Psychometric properties of the French adaptation of the Multidimensional Body Self Relations Questionnaire–Appearance Scales. *Psychological Reports, 105*, 461-471. doi.org/10.2466/pr 0.105.2. 461-471 Vocks
- Vossbeck-Elsebusch, A. N., Waldorf, M., Legenbauer, T., Bauer, A., Cordes, M., & Vocks, S. (2014). German version of the Multidimensional Body-Self Relations Questionnaire-Appearance Scales: Confirmatory factor analysis and validation. *Body Image 11*, 191-200. doi: /10.1016/j.bodyim. 2014.02.002
- Westen, D., & Rosenthal, R. (2003). Quantifying construct validity: Two simple measures. *Journal of Personality and Social Psychology, 84*(3), 608-618. doi:10.1037/0022-3514.84.3.608
- Whitbourne, S. K., & Skultety, K. M. (2002). Early adolescent transition. In T. F., Cash & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp. 83-91). New York: Guilford Publications, Inc.
- Williamson, D. A., Stewart, T. M., White, M. A., & Crowe, E. Y. (2002). An information-processing perspective on body image. In T. F., Cash & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research, and clinical practice* (pp. 47-54). New York: Guilford Publications, Inc.

- Zaman, K. (2014). *Body dissatisfaction and disordered eating behaviors among mothers during lactation period* (Unpublished master's thesis). National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan.
- Zubair, S. (2008). *Body image and generalized contentment among students* (Unpublished master's thesis). National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan.

Received July 7th, 2015

Revision received November 24th, 2017