

Development and Validation of Eating Problems Scale on Pakistani Youth Sample

Mahreen Naeem, Sadia Saleem, and Zahid Mahmood

University of Management and Technology

The current study aimed to develop a culturally appropriate measure of eating problems in young adults in Pakistani culture. The items were generated through an open-ended phenomenological approach and 40 participants (20 women and 20 men) with age range of 15-25 years ($M = 19.43$, $SD = 3.31$) grads and undergrads from public and private sectors were individually interviewed. Participants' responses were collated; vague and duplicate items were discarded. A list of 75-item was generated and then it was validated by 10 clinical psychologists. Using content validity index a 5-point likert Eating Problem Scale (EPS) having 63 items was generated for development of psychometric properties. For standardization of EPS, 673 students (Men = 269 and Women = 405) with age ranges from 15 to 25 years ($M = 19.76$, $SD = 2.21$) were recruited through stratified random sampling from public and private colleges and universities. Demographic Performa, Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995), Rosenberg Self-Esteem Scale (Rosenberg, 1965) and Eating Attitudes Test-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982) were used for measurement of validity. Through EFA, five factors generated proneness to obesity, anxious-avoidant eating, preoccupied with body image, bulimic tendencies and disorganized eating. EPS found to have remarkable internal consistency ($\alpha = .70$), split-half reliability (.86), highly to moderately significant test-retest reliability, context and discriminant validity. Results were discussed further in the context of cultural implication.

Keywords. Eating problems, young adults, scale development, reliability, validity, Pakistan

Young adulthood is the age of the development of self-concept and identity, predisposed by factors like gender, family, peer, culture

Mahreen Naeem, Sadia Saleem, and Zahid Mahmood, School of Professional Psychology, University of Management and Technology, C-II, Johar Town, Lahore, Pakistan.

Correspondence concerning this article should be addressed to Mahreen Naeem, School of Professional Psychology, University of Management and Technology, C-II, Johar Town, Lahore, Pakistan. Email: mahrnaeem@yahoo.com

and recent trends (Thomas, 2003). It is a very formative and unique time with a lot of changes in life in terms of biologically, emotionally, cognitively, socially and many more aspects (Sawyer, Azzopardi, Wickremarathne, & Patton, 2018). Due to issues and challenges, among other generations, young adults are at the higher risk of developing mental health problems. From all lifetime mental illnesses, half of them have their onset by age of 14 years and three quarters by the age of 20 and above (National Alliance on Mental Illness, 2019). As per World Health Organization (2019) report, top five major mental health problems in young adults are anxiety, depression, ADHD, addiction and eating disorders.

The contributing factors of this higher mental illness ratio could be biological changes, stress due to gaining and maintaining autonomy, peer pressure, academic challenges, sexual identity, bonding and attachment, intra and interpersonal difficulties, increased access and usage of technology, career building and cultural influences (Hudson & Pope, 2018). Influence of media and gender related norms could also be a reason to exacerbate the disproportionality among the aspiration, perception, and lived reality in adolescents and early adults (Dopp, Lipson, & Eisenberg, 2013). Nutrition and eating habits vary due to increased rate of growth and changes in puberty associated body composition in adolescents and young age (Jenkins & Horner, 2005).

Unhealthy eating habits are very common in youth all over the world and when these comes in a disordered form, may become complex illnesses and is affecting young adults with increased frequency (Wade, 2019). Eating problems are among top five highly prevalent mental health problems in youth (World Health Organization, 2019). The striking and sudden increase in body energy and nutritional requirements overlap with other contributing factors that may affect the food choices among youth and also their nutrient intake (Ekern, 2018). Some highlighting psychosocial factors i.e., quest for independence and acceptance in the peer group, a great amount of time spent in educational institutes, and/or work activities, media propagandas and advertisement, and increased preoccupation with self-image, are all widely contributing to erratic and unhealthy eating behaviors that are becoming common among young age (Darrow, Accurso, Nauman, Goldschmidt, & Le Grange, 2017; Park, 2012).

In general, eating problems are mainly characterized by unhealthy and disorganized eating habits and most of the times are associated with feeling of distress and/or concerns related to body shape and weight (American Psychiatric Association, 2013).

Commonly reported eating problems are anorexia nervosa, binge eating, bulimia nervosa, avoidant-restrictive food intake and obesity (Ekern, 2018). However, some other mentionable eating problems are emotional eating, compulsive overeating, disordered eating, picky eating, pica and orthorexia nervosa (Petre, 2019). The basic ingredients of the symptomatology of these problems are obsession and preoccupation with weight gain, focusing on body shape associated with avoidance and restriction (anorexia); uncontrollable episodes of binge eating associated with purging to compensate (bulimia) (APA, 2013); mainly because of poor self-esteem. Picky and choosy eating habits and preoccupied with healthy food intake associated with quality and quantity and also included (Petre, 2019).

Eating problems are commonly seen in women as compared to men, in diagnosed cases of anorexia and bulimia, almost 10% are male; (a ratio of 1:10 male to female) (Galmiche, Déchelotte, Lambert, & Tivolacci, 2019). Although, some experts suggest these figures are an underestimation as men usually deny to have eating problems and similarly less likely to seek help for them than women. Recently, a number of researches also suggest that the ratio of men having eating problems is at increase (Eisenberg, Nicklett, Roeder, & Kirz, 2011; Ekern, 2017; Raevuori, Keski-Rahkonen, & Hoek, 2014), but because of stigma and societal pressures, males limit themselves to seek psychological help regarding this (Mitchison, Hay, Slewa-Younan, & Mond, 2014). Despite of such important differences i.e., onset age, frequency, nature of problem, there are literature evidences that eating problems in men are very similar in nature likely to women (Raevuori et al., 2014).

Eating problems are now considered as a serious and potentially life threatening and permanent mental conditions, causing severe biological and psychosocial dysfunctionality (Ekern, 2020). If these remain untreated, it may lead to severe damage even death (Mairs & Nicholls, 2016). These problems often comorbid with other major psychological problems like depressive episodes, bipolar, anxiety disorders, OCD, poor self-esteem, body dysmorphic, suicidal and non-suicidal, but self-injurious behaviors and substance abuse (APA, 2013; Becker, et al., 2014; Blinder, Cumella, & Sanathara, 2006; Wade, 2019; Woodside & Staab, 2006). Therefore, early detection and intervention related to these symptoms appears more promising rather to make symptoms worse and chronic (Treasure, Stein, & Maguire, 2015).

For early and accurate detection of eating problems, it is necessary to rule out the eating pathology on time and for this, standardized and culturally sensitive measures and tools require

(Mairs & Nicholls, 2016). There are a plenty of measures available for screening, diagnosing and/or confirming the type of eating disorders on the basis of symptomatology and its manifestation, i.e., SCOFF questionnaire (Morgan, Reid, & Lacey, 1999), Eating Attitudes Test-26 (Garner et al., 1982), Eating Disorder Inventory (EDI) (Garner et al., 1983) and Eating Disorders Examination-Questionnaire (Fairburn & Beglin, 2008). Moreover, there are multiple translations and adaptations are available of these tools in different nations, i.e., EDI Spanish version (Guimerá & Torrubia, 1987). As advancements and awareness are growing day by day in all over the world, and creating awareness more and more about mental health issues, multiple researches highlighted the cultural perspectives about these problems (Abdullah & Brown, 2011; Gopalkrishnan, 2018; Nieuwsma et al., 2011). A plethora of researches suggested that psychopathology related to every mental health problem varies from individual to individual, in term of onset, manifestation, behavior, attitudes and intervention as ecology, culture, values, and societal norms affect mental health (Mahmood, 1991; Saleem & Mahmood, 2012). The variation in cultures and specific lifestyles depict its unique presentation related to mental health diversities, effecting the views and experiences of people related to health and illness and also their pattern to seek treatment and management, nature and kind of therapeutic relationship, stigma, discrimination and racism (Gopalkrishnan, 2018).

Similarly, when it comes to eating behaviors and problems, this cultural variance also have its impact on eating problems; its manifestation, etiology, beliefs, behaviors and attitudes are strongly related to culture, social norms, ethnicity, familial, and societal demands and pressures (Becker, 2007; Miller & Pumariaga, 2001) and this may also have its strong impact on further management and treatment modalities. Eating is a basic survival need of humans as well as has strong emotional, societal and religious impact. It is greatly affected by cultural values and norms i.e., in celebrations, gatherings, functions, parties and events, eating is an essential part. Also, some evolving facts suggest that culture greatly impacts upon the values of people related to their emotions, behaviors and experiences toward any emotional situations (Durrani et al., 2017). After acknowledging these facts and figures, using the same pre-existing tools standardized in other cultures will raise a great question mark upon the validity, reliability and further generalizability of those studies (Pearson, 2010; Yin & Fan, 2000).

While discussing this with respect to the Pakistani culture and society, the societal norms, demands, manifestation, etiology,

behavior, emotions and thoughts also differ from other cultures with respect to the eating problems (Muazzam & Khalid, 2011; Suhail & Nisa, 2002). Muazzam and Khalid (2008; 2011) extensively worked on disordered eating behavior among Pakistani youth and developed an indigenous tool for measurement of disordered eating behavior. It highlighted social and individual components, like eating behaviors within gatherings, with guests and friends; with also somehow individual and personal aspects of eating. Unfortunately, it does not depict the complete picture of disordered eating as it is lacking the flavor of psychological, emotional, and behavioral aspects of eating. Also, how eating habits are influenced by self-image, opinions and comments from others, cognitive and thinking processes; considered as consequences and manifestations of eating problems are missing. Eating problems behaviors i.e., anorexia, bulimia, binge and anxious eating are not part of it, which are commonly reported eating problems on general and clinical level as well. moreover, there are very few studies available with respect to Pakistani culture, which have focused on eating problems (Amjad, 2015; Malik, Shaukat, & Hussain, 2019; Muazzam & Khalid, 2008; 2011; Memon et al., 2012; Mumford, Choudhry, & Whitehouse, 2002; Shaikh & Kayani, 2014), yet they are failed to consider the cultural-specific experience and expression of eating problems; limited and selective group of population included in research, confining the generalizability and most of these studies had taken eating as a diagnostic entity rather than the symptomatology. Therefore, to counter these issues, at first, there is a dire need to develop an indigenous tool related to eating problems specifically in Pakistani culture for prevention and intervention at earliest. So that, this may set a ground for further upcoming researches and clinical studies at its best.

Related to above-described issues, present study aims to capture the manifesting behaviors and cognition related to eating problems in Pakistani young adults by following the standardized measures to develop a culturally valid and reliable tool. Furthermore, this may help to understand the nature and manifestation of behaviors and thinking patterns related to eating problems specifically in young adults and also in future, this standardized tool will be helpful and useful for further researchers.

Method

Phase I: Generating Item Pool

Participants and procedure. At first, the current study was approved from the Institutional Review Board (IRB) for further

proceedings. After that, phenomenology was explored for the development of an indigenous tool of eating problems behavior for young adults. For this purpose, 40 participants (20 girls & 20 boys) ranging from 15-25 years ($M = 19.43$, $SD = 3.31$), grad and under graduates (intermediate, bachelors, B.S. and Masters student) from private colleges and universities were recruited through convenient sampling. The university authorities were sent brief aims and objectives of the current study. Once the permission was granted, a brief introduction with purpose of the study was explained with assurance of confidentiality and anonymity to each participant. Open-ended semi-structured interview method was used to explore the phenomenon. Each participant was interviewed individually on an average of two to three minutes with a question "What are the common eating and related problem behaviors are found in the people of your age?" Some other following explanatory questions were asked as per the responses received, i.e., how, when, what kind of behaviors, etc.

The responses collected were recorded in verbatim form with the permission of participants. A debriefing session was also conducted with each participant. Each interview was transcribed and after a thorough and close examination, a list of 70 items was finalized. Original expression and connotation was retained while finalizing the list of items. The content items consisted of anxious and careful about physique, figure, calories, bingeing and craving of high caloric items, compulsive and disorganized eating.

Phase II: Expert Validation

Participants and procedure. After designing the list of eating problem behavior, next step was expert validation of the scale for establishing face and content validity of the newly developed scale. With minimum three-year clinical experience, 9 clinical psychologists were selected and they were handed over the prepared list along with instruction to rate each statement to which extent it reflects the eating problems in young adults on the given 1-4 scale (Davis, 1992) in terms of its relevance. For which, 1 (*irrelevant*), 2 (*somewhat relevant*), 3 (*quite relevant*) and 4 (*highly relevant*).

By using content validity index (CVI) presented by Polit and Beck's (2006) two poles were made for computing item-level content validity index (I-CVI) and scale-level content validity index (S-CVI). For this all opinion collected from experts, were divided dichotomously into relevant (3 = *quite relevant* and 4 = *highly relevant*) and irrelevant (1 = *irrelevant* and 2 = *somewhat relevant*). For computing I-CVI of each item, number of experts scored relevant

(3 & 4) were divided by total number of experts. Following the Lynn's (1986) criteria 63 out of 70 items, which scored more than .78 (9 experts) were retain in the developed scale and 7 items, scored below than .78 were discarded. Similarly, following the Waltz et al.'s (2005) advice for computing S-CVI/Ave, the scale scored .92 (greater than .90) for average congruity.

These calculations showed that construct of eating problem is fully conceptualized, truly depicting items, judiciously selection of experts (Davis, 1992) and clear instructions (Lynn, 1986). Some items were also a little bit rephrased in respect of the experts' opinion. Now, 63-item eating problem scale was ready for pilot study and developing psychometric properties.

Phase III: Try out

Participants and procedure. To check the user friendliness and any other ambiguity in administration of this newly developed "Eating Problem Scale (EPS)" after expert validation was piloted on 30 (18 women and 12 men) grads and undergrads young adults from private and public institutes with age range of 15-25 years from intermediate, bachelors, B.S. Hons. and Masters program students. They were asked verbally about clarity and understanding of the items given in the scale and as per their feedback, unclear and ambiguous items were excluded or rephrased.

Phase IV: Establishing Psychometric Properties of EPS

This study aimed to establish psychometric properties of the EPS. After the succession of above-mentioned steps, it was all set to administer on devised main study.

Participants. The participants ($N = 673$; Men = 269 and Women = 405) were selected through stratified random sampling and strata was made by men and women and classes wise (1st, 2nd, 3rd, 4th, 5th and 6th years students) with age ranges 15 to 25 years ($M = 19.76$, $SD = 2.21$). Participants were recruited from public and private colleges and universities consist of undergraduate and graduate students (men and women) from intermediate, Bachelors, B.S. Hons., and Masters degree programs. Participants with any kind of neurological and endocrinological problems were excluded from this study to maintain uniformity. The women are over-representative in this set of sample as the ratio of women studying in public and private institutes were high compared to men. Also, the number of discarded performas (due to incomplete, careless and false information) filled by males were more as compared to female ones, showed the interest level and truthfulness of shared information, women are more truthful and serious toward it.

Measures

Demographic Performa. A performa carrying demographic information including age, gender, class, family system, parents' education, any physical or psychological illness, current estimated and ideal height, and weight was given to participants.

Eating Problems Scale for Young Adults (EPS). New indigenously developed eating problems scale to measure eating problems in young adults was used, consisted of 63 items with 5-point likert scale 0 (*never*), 1 (*a little*), 2 (*to some extent*), 3 (*often*), and 4 (*extremely*) carrying instructions "following statements are related to common eating habits in your age groups. Read them carefully and then rate them to which extent it is applicable to you from *never* (0) to *extremely* (4) range." Higher the score on EPS denotes to more eating problems.

Depression, Anxiety and Stress Scale-Short Form (DASS-SF 21). Standardized tool to measure the symptoms of depression, anxiety and Stress, DASS (Lovibond & Lovibond, 1995) was used. It was a 4-point likert scale, 0 (*not applicable*), 1 (*applicable to some extent*), 2 (*applicable for a considerable degree*), and 3 (*very much applicable*). It contains 21 items, with three subscales; depression, anxiety and stress, each having 7 items. DASS-21 was used to measure the context validity with EPS.

Rosenberg Self-Esteem Scale. A 10-point item scale measures the both positive and negative aspect of self-esteem (Rosenberg, 1965). It is 4-point likert scale ranging from strongly agree to strongly disagree. It was used to measure discriminant validity of Eating Problems Scale.

Eating Attitudes Test-26 (EAT-26). For measurement of concurrent validity, EAT-26 was used. It is a self-report measure of eating disorder behavior and concerns (Garner et al, 1982). It is a 26 item 6-point likert scale with 0 for *never, rarely, sometimes*, 1 = *often*, 2 = *very often* and 3 for *always*. It had three factors named Dieting Scale (DS), Bulimia and Food Preoccupation Scale (BFPS), and Oral Control Subscale (OCS) and also total of whole scale.

Procedure

Eight institutes were approached for the purpose of data collection and among them, six institutes allowed data collection. Participants were recruited through multistage stratified random sampling from 1st to 6th year on the basic of men and women. The study was carried out in group on an average of 35 participants

simultaneously. Participants were briefed about introduction of the researcher, purpose and effectiveness of the study verbally and with the verbal consent of the research participants, data collection procedure was carried out. Participants were welcomed to clear their queries without hesitation. They were asked to not show their identity in the form of their names or any other contact or relatedness upon research performance. Each participant was given the right to include or exclude from the study at any point of time. It took about an average of 30-35 minutes (minimum 20 and maximum 40 minutes) in each group testing. After collecting protocols from them, they again were asked to clear their queries if they have. The participants were debriefed after the testing. The gathered data was entered in the SPSS version 24 spreadsheet for further analyses and interpretations.

Results

Exploratory Factor Analysis. Principal Axis Factoring with Promax rotation was used to cluster the items, having similar themes on 63 items of EPS with ($N = 673$) participants from government and private colleges and universities with age range of 15 to 25 years ($M = 19.76$, $SD = 2.21$). By Scree plot, five factors were determined, which described the best depiction; confirmed by Eigen value and variances, 55 items showed significant item-total correlation; with .30 or above loading to retain in given factor. KMO measure of sample adequacy were (.91), with $p < .001$ Bartlett's test of Sphericity. Inter-factor Correlation also determined as well as the internal consistency of this scale was described through Cronbach Alpha Reliability (.70). The Eigen value of five factors are 11.17, 3.76, 2.71, 1.63, 1.52; % of variance 17.77, 5.97, 4.30, 2.60, 2.42; and cumulative % 17.74, 23.70, 28.00, 30.60, and 33.01 respectively.

Table 1

The Factor Structure of Eating Problems Scale for Adults (N=673) With Promax Rotation (PAF)

Items	F1	F2	F3	F4	F5	Items	F1	F2	F3	F4	F5
4	.50	.05	-.02	-.34	.25	31	.06	.44	.16	-.16	.04
8	.57	-.09	.11	.13	-.13	32	.04	.42	.15	.08	.04
11	.68	-.09	.00	-.06	-.01	40	-.07	.50	-.20	.09	.06
14	.47	-.05	.09	.06	-.03	43	-.01	.57	-.19	.07	.05
15	.58	-.08	.04	.04	-.07	48	.03	.51	.15	.20	-.13
17	.62	-.11	.06	.12	-.09	59	-.02	.55	.08	.17	-.07

Continued...

Items	F1	F2	F3	F4	F5	Items	F1	F2	F3	F4	F5
25	.32	-.04	.13	.10	.01	7	.03	-.07	.54	-.01	.12
35	.64	.02	.01	-.20	-.12	9	.07	.24	.56	-.12	-.03
36	.57	-.11	.01	.05	.06	12	.08	.06	.67	-.04	-.02
39	.44	.05	.07	.05	-.05	13	.07	.04	.62	.05	.02
41	.40	-.04	-.03	-.12	.33	20	.01	-.10	.68	.03	.15
46	.58	.08	.00	.19	-.16	23	-.03	.11	.75	-.06	.04
47	.53	.07	.08	.05	-.04	33	.04	.03	.61	.11	.10
49	.49	.07	.04	.19	-.08	45	.08	.32	.34	-.03	-.12
50	.58	.06	-.08	.09	-.08	52	.11	.21	.12	.62	.09
56	.36	.01	-.05	.20	.04	53	.17	.12	-.09	.70	-.06
57	.39	.07	-.14	-.05	.34	58	.10	-.06	.05	.51	.17
62	.48	-.10	-.04	.21	.08	61	.11	.01	-.00	.72	-.01
1	.09	.39	.07	-.12	.00	63	.11	.02	.02	.63	.03
2	-.05	.55	-.11	.05	-.03	5	.24	.16	-.28	-.01	.33
3	.28	.30	-.11	-.31	.21	16	-.15	.07	.19	.13	.47
6	.05	.31	.18	.01	.04	19	-.14	-.11	.12	.01	.55
10	-.08	.56	.10	.06	-.03	21	-.18	.00	.20	-.02	.60
18	-.14	.37	.03	.05	.08	29	.08	.11	-.18	.03	.52
24	-.14	.45	.03	.05	.08	37	.18	-.24	.24	-.05	.30
26	.01	.57	.30	-.19	-.15	38	.24	-.21	.24	-.05	.36
27	-.05	.81	-.09	-.16	-.06	42	-.22	.07	.02	.32	.55
30	.04	.30	-.06	.17	.20						

Factor loading is based on above .30, bolded in relative factor.

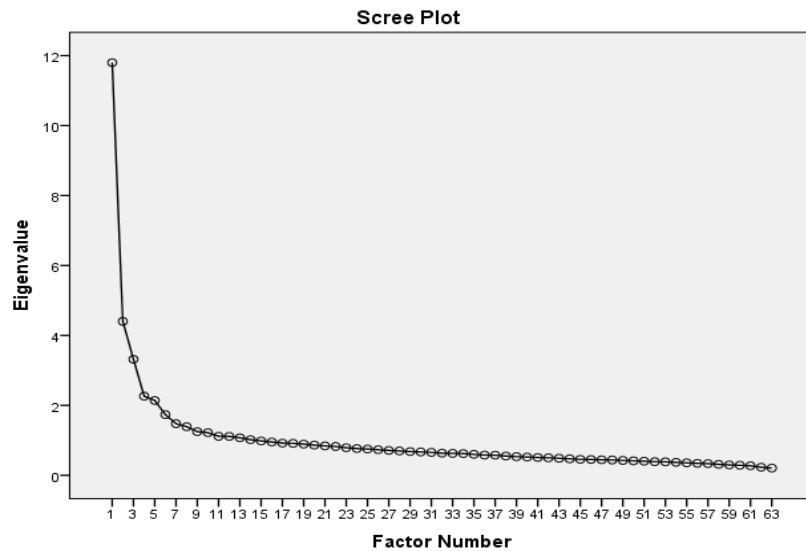


Figure 1. Scree plot showing extraction of factors of Eating Problems Scale for Adults.

Criterion of Kaiser-Guttman's (Kaiser, 1974) Eigen value greater than 1 depicted five factors solution finalized for further analyses.

Factor 1: *Proneness to Obesity.* This factor includes 18 items in it with the theme of eating habits that make oneself prone to develop obesity; i.e., craving for food in odd timings, eating without feeling hungry, excessive eating during stress, binge eating, uncontrollable eating, overeating in stress and gatherings, having difficulty to deny food, and preoccupation with food. The maximum score obtained on this factor is 72.

Factor 2: *Anxious-Avoidant Eating.* There are 16 items in this factor characterizing with the feature of eating habits associated with anxiousness and food restriction; i.e., compulsive weight checking, calculating calories during meal, feeling guilty after overeating, avoiding carbs and oil, fearful of being overweight, following way to suppress hunger, trying hard to lose weight and setting an ideal figure. The maximum score obtained on this factor is 64.

Factor 3: *Preoccupied with Body Image.* The factor consists of 8 items mainly concerned about one's preoccupation with body, self-image and criticizing oneself, i.e., over-concerned with other's opinion about oneself, overanxious about body and shape, criticizing oneself related to weight and shape, feeling of having disproportionate body, consider oneself to be fat and inferiority complex related to body and shape. The maximum score obtained on this factor is 32.

Factor 4: *Bulimic Tendencies.* The fourth factor consist of 5 items characterized with undoing or purging of taken food, i.e., having an urge to vomit after overeating, use of laxatives and hunger suppressants and avoid gatherings due to fear of overeating. The maximum score obtained on this factor is 20.

Factor 5: *Disorganized Eating.* There are 8 items in this factor mainly related to unorganized eating habits like choosy, picky and fussy eating, being careless in eating, having laziness, deny food even having an urge and eating less in stress. The maximum score obtained on this factor is 32.

Validity. Convergent validity of EPS established with the help of Depression, Anxiety and Stress Scale (DASS) and discriminant validity established with the help of Roesenberg Self Esteem Scale (RSES) (Table 2). Results showed that there are significantly positive correlation between the factors of EPS and DASS and negative correlation between EPS and RSES.

Table 2

Means, Standard Deviation, Cronbach Alpha Values, and Inter-correlations Between Five Factors of EPS, DASS and RSES (N = 241)

Scales	1	2	3	4	5	6	7	8	9	10	11
1. Proneness to Obesity	-	.34**	.42**	.38**	.38**	.79**	.20**	.23**	.19**	.22**	-.17**
2. Anxious-Avoidant Eating		-	.62**	.38**	.28**	.77**	.16*	.18**	.14*	.17**	-.05
3. Distorted Body Image			-	.36**	.34**	.77**	.25**	.23**	.29**	.28**	-.29**
4. Bulimic Features				-	.14**	.55**	.07	.21**	.11	.13*	-.19**
5. Disorganized Eating					-	.57**	.41**	.27**	.32**	.37**	-.27**
6. Eating problems Total						-	.30**	.29**	.28**	.32**	-.24**
7. DASS-Stress							-	.72**	.80**	.93**	-.43**
8. DASS-Anxiety								-	.72**	.88**	-.30**
9. DASS-Depression									-	.93**	-.51**
10. DASS-Total										-	-.46**
11. Self-Esteem											-
<i>M</i>	25.22	18.03	9.48	3.30	13.26	69.33	8.15	7.08	7.56	22.80	18.17
<i>SD</i>	13.26	11.05	7.85	4.12	6.35	30.88	4.74	3.87	4.45	11.94	4.77
<i>α</i>	.87	.85	.86	.82	.70	.92					

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

Concurrent Validity. It was established with the help of Eating Attitude Scale (EAT-26) (Garner et al., 1982), the results concluded that there are significant positive correlation between both scales.

Table 3

Inter-correlation of Factors of Eating Problems Scale (EPS) and Eating Attitude Scale (EAT-26) (N =241)

Scales	DS	BFPS	OCS	EAT-T
Proneness to Obesity	.18**	.39**	.15*	.28**
Anxious-Avoidant Eating	.31**	.18**	.11	.28**
Distorted Body Image	.31**	.18**	.10	.27**
Bulimic Features	.24**	.26**	.06	.24**
Disorganized Eating	.20**	.17**	.20**	.25**
Eating Problems Total	-.14	.34*	.18**	.37**

df = 240. *p* < .05* *p* < .01**.

Reliability Analyses. Split half reliability and test-retest reliability analyses carried out. Two halves were generated for split half reliability test, having correlation of .86 ($p < .001$). Test-retest reliability was calculated within the interval of one to two weeks on 91 (13.52%) participants out of total 673 participants. The participants were first given complete current research protocol and were asked to mention their identity in terms of name and participant ID#. They were assured that their identity will only be used for research purpose, i.e., to retest the eating problems scale (EPS) and then after within one to two week intervals, they were retested on demographic and EPS only. The score of test-retest reliability ranged from .62 to .88.

Discussion

This current study was with intention to develop a culturally valid and reliable scale on Eating Problems in young adult, for which, eating problems phenomenon in Pakistani culture was explored and after expert validation and EFA, it was transformed into a 55-item 5-point scale. EFA yielded five factors of EPS highlighting the major eating problems. The items and factor structure of EPS was found to be quite different from tools developed in Western studies, i.e., SCOFF (Morgan et al., 1999), in a subjective manner. EAT-26 (Garner et al., 1982) and EPS factors also vary with each other. Common factors between these two are with features of Bulimia, food preoccupation, avoidant and controlled eating. “Preoccupied with body image” and “proneness to obesity” are relatively new factors in

EPS. Similarly, in comparison with Eating Disorder Examination Questionnaire (Fairburn & Beglin, 2008), the factors were related to weight and shape concerns and restrict eating habits, but EPS deals with maximum all kind of eating problems in addition with “preoccupied with body image.” Among the eight factors of Eating Disorder Inventory (Garner et al., 1983), the similar factors are “bulimic symptomatology,” “self-body image dissatisfaction” while other factors are somewhat different as this scale was mostly based on psychodynamic approaches and underlying issues. In comparison with Disordered Eating Behavior Scale (Muazzam & Khalid, 2011), name of factors vary, but theme of content is not so much different, but EPS has more clear and vast picture in terms of cognition, psychosocial, pathological aspects of eating problems specifically in the youth of Pakistani culture.

First factor of EPS is “Proneness to Obesity” related to those eating habits, which lead an individual toward obesity or binge eating. Obesity, in this era is becoming one of the major problems worldwide due to the age of technology and connectivity. Younger adults are getting addicted to electronic gadgets and in the results of that, they are at higher risk of developing habit of overeating (Ekern, 2019). Moreover, easy availability of variety of food only on one click and multiple food choices are adding more fuel. With respect of Pakistani culture, food also serves here for traditional purposes. Here, we have social, familial and peer pressures and demands related to eating, eating choices and eating habits (Muazzam & Khalid, 2011). In Pakistani cultural values regarding eating habits, food and eating is an integral part and a large amount of money, we used to spend on food and prefer multiple food varieties in occasions and gatherings and also enjoy eating with friends and family. So food and eating could be basic instinct and preference to relieve from stress and also for celebration.

Second and third factors are “Anxious-Avoidant Eating” and “Preoccupied with Body Image” respectively, characterized with the avoidant/restrictive eating associated with main components of anxiety and fear related to weight gain, poor body and self-image. In Pakistani society, due to multiple reasons, i.e., marriage pressure, limited opportunities and media explosion, cultural norms and attitudes related to body image and shape have completely changed (Kamran, 2008). In all over the Asian cultures, an ideal figure has becoming thin for women and for males, fitness matters a lot. Ideal figure, thin and attractive models, at the end of both male and female are now becoming internalizing and these trends, pressures and demands are leading the population toward developing eating

problems (Jalees, de Run, & Tariq, 2014). So, as per many young adults, they are pressured to adapt an ideal figure and in the result, it is ruining their eating habits and making them prone to involve in avoidant and restrictive eating habits and preoccupation with their body shape and image.

The fourth factor “Bulimic Features” are associated with purging or an urge to purge the in-taken food. In the light of above described factors of socio-cultural and familial, these type of bingeing and purging behavior are also reported in Pakistani culture. Moreover, these disturbed eating behaviors also indicates the element of stress, anxiety, distorted self-image are its perpetrator. Last factor of “Disorganized Eating Habit” is more closely related to disordered eating behaviors and these habits are also have its unique style of expression with respect to Pakistani culture (Muazzam & Khalid, 2011). A number of people, who are having disorganized eating habits might trying to adapt conflicting cultural norms, i.e., obsession with eating and food, variation, desire to be thin and fit, emotional pressures, etc. achieving the ideal figure lead them to involve in disorganized eating patterns (Mumford et al., 2002) and so far it is clearly depicting in this factor. Therefore, because of these above-discussed facts and figures, there was a dire need to address these factors and to develop a culturally valid and reliable tool to measure eating problems for Pakistani culture as the trends, experiences, manifestations and behavior are quite different as compared to other cultures.

Discussing about validity measurements, EPS was found to have high face and content validity by experts. To measure construct validity; convergent validity was established through DASS (Lovibond & Lovibond, 1995) showing positive correlation among the five factors of EPS and three factors of DASS indicating that eating problems have close association with stress, anxiety and depression. Discriminant validity measured with the help of RSES (Rosenberg, 1965) and five factors of EPS were found to be negatively correlated with RSES. It is also indicating that there is negative association between self-esteem and eating problems. Concurrent validity was established with the EAT-26 (Garner et al., 1982) and also it was found to be positively correlated which indicates that EPS is also measuring phenomena equivalent as measured by eating attitude test-26. Internal consistency, split half and test-retest reliability showed that EPS was found to have highly reliable scale. So, Eating Problems Scale is said to be a standardized culturally valid and reliable scale with respect to Pakistani culture.

Conclusion

Eating problems are considered as to be among top five mental health problems that is affecting especially our young generation and these ones are leading, causing and effecting other major health hazards, in terms of biological, psychological, social and spiritual health of an individual. Also, it was discussed that how socio-culture and familial norms have their impact upon the nature and behavioral aspects of eating problems. The development of this indigenous scale is a hallmark contribution for the betterment of the society and addressing the mental health problems more effectively with its cultural context.

Limitations and Suggestions

Pakistan is one in among the third world country lists, where the poverty rate is high and health care facilities and providers are in limited numbers. Moreover, there are also issues related to awareness and acknowledging these kind of problems. So, most of time eating problems are overlapped with nutritional and malnutrition issues. Over-representation of woman population in the development of this scale is also considered as limitation of this study. Also, it was carried out in rural population so there is unavailability of facts and figures from urban areas. Since, no research is considered as perfect, but by overcoming these issues, this study can be more effective and useful.

References

- Abdullah, T., & Brown, T. L. (2011). Mental illness stigma and ethnocultural beliefs, values, and norms: An integrative review. *Clinical Psychology Review, 31*(6), 934-948.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (DSM-5). American Psychiatric Publishers.
- Amjad, M. (2015). *Causes and consequences of obesity among school going children: A comparative study of rural and urban areas of Punjab* (Doctoral dissertation), University of Agriculture, Faisalabad.
- Becker, A. E. (2007). Culture and eating disorders classification. *International Journal of Eating Disorders, 40*(S3), S111-S116.
- Becker, C. B., Plasencia, M., Kilpela, L. S., Briggs, M., & Stewart, T. (2014). Changing the course of comorbid eating disorders and depression: What is the role of public health interventions in targeting shared risk factors? *Journal of Eating Disorders, 2*(1), 15-23.

- Blinder, B. J., Cumella, E. J., & Sanathara, V. A. (2006). Psychiatric comorbidities of female inpatients with eating disorders. *Psychosomatic Medicine*, 68(3), 454-462.
- Darrow, S. M., Accurso, E. C., Nauman, E. R., Goldschmidt, A. B., & Le Grange, D. (2017). Exploring types of family environments in youth with eating disorders. *European Eating Disorders Review*, 25(5), 389-396.
- Davis, L. L. (1992). Instrument review: Getting the most from your panel of experts. *Applied Nursing Research*, 5, 194-197.
- Dopp, R. R., Lipson, S. K., & Eisenberg, D. (2013). Mental health among late adolescents and young adults from a population-level and clinical perspective. *Adolescent Medicine: State of the Art Reviews*, 24, 573-596.
- Durrani, S. M., Mahmood, Z., & Saleem, S. (2017). The Development and Validation of Temperament Scale for University Students. *FWU Journal of Social Sciences*, 11(1), 264-275.
- Eisenberg, D., Nicklett, E. J., Roeder, K., & Kirz, N. E. (2011). Eating disorder symptoms among college students: Prevalence, persistence, correlates, and treatment-seeking. *Journal of American College Health*, 59(8), 700-707.
- Ekern, J. (2017). Eating disorders in men. Eating disorder hope. *Eating disorder information help & resources*. Retrieved from <https://www.eatingdisorderhope.com/information/eating-disorder>
- Ekern, J. (2018). Eating Disorder Hope. *Eating Disorder Information Help & Resources*. Retrieved from <https://www.eatingdisorderhope.com/information/eating-disorder>
- Ekern, J. (2019). Binge Eating Disorder: Causes, Symptoms, Signs & Treatment Help. *Eating Disorder Information Help & Resources*. Retrieved from <https://www.eatingdisorderhope.com/information/eating-disorder>
- Ekern, J. (2020). How dangerous are the long term effects of Anorexia? Eating Disorder Hope. *Eating Disorder Information Help & Resources*. Retrieved from <https://www.eatingdisorderhope.com/information/eating-disorder>
- Fairburn, C. G., & Beglin, S. (2008). Eating Disorder Examination Questionnaire. In C. G. Fairburn (Ed.). *Cognitive behavior therapy and eating disorder* (pp. 309-313). Guilford Press.
- Galmiche, M., Déchelotte, P., Lambert, G., & Tavolacci, M. P. (2019). Prevalence of eating disorders over the 2000-2018 period: A systematic literature review. *The American Journal of Clinical Nutrition*, 109(5), 1402-1413.
- Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, 2(2), 15-34.

- Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The eating attitudes test: Psychometric features and clinical correlates. *Psychological Medicine, 12*(4), 871-878.
- Gopalkrishnan, N. (2018). Cultural diversity and mental health: Considerations for policy and practice. *Frontiers in Public Health, 6*, 179-185.
- Guimerá, E., & Torrubia, R. (1987). Adaptación española del Eating Disorder Inventory (EDI) en una muestra de pacientes anoréxicas. In *Anales de Psiquiatría, 3*(5), 185-190.
- Hudson, J. I., & Pope, H. G. (2018). Evolving perspectives on the public health burden of eating disorders. *Biological Psychiatry, 84*(5), 318-319.
- Jalees, T., de Run, E. C., & Tariq, H. (2014). A structural equation model: Socio cultural influence on body image of Pakistani consumers. *Market Forces, 9*(1), 95-119.
- Jenkins, S., & Horner, S. D. (2005). Barriers that influence eating behaviors in adolescents. *Journal of Pediatric Nurses, 20*(4), 258-267.
- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39*, 31-36.
- Kamran, R. (2008, August 6). How the Pakistan media reshaping the society. *Pakistan Television*. Retrieved from <http://www.scribd.com/doc/18271317/Mass-Media-in-Pakistan-by-Raja-Kamran>.
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety & Stress Scales*. (2nd ed.). Psychology Foundation.
- Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research, 35*, 382-385.
- Mahmood, Z. (1991). Intelligence, IQ and the third world. *Pakistan Journal of Psychological Research, 6*(1-2), 31-53.
- Mairs, R., & Nicholls, D. (2016). Assessment and treatment of eating disorders in children and adolescents. *Archives of Disease in Childhood, 101*(12), 1168-1175.
- Malik, M., Shaukat, W., & Hussain, A. (2019). Binge eating disorder among obese/overweight in Pakistan: Under-diagnosed, undertreated and misunderstood. *Clinical Investigation, 9*(2), 75-80.
- Memon, A. A., Adil, S. E. E. R., Siddiqui, E. U., Naeem, S. S., Ali, S. A., & Mehmood, K. (2012). Eating disorders in medical students of Karachi, Pakistan-a cross-sectional study. *BMC Research Notes, 5*(1), 84-91.
- Miller, M. N., & Pumariega, A. J. (2001). Culture and eating disorders: A historical and cross-cultural review. *Psychiatry: Interpersonal and Biological Processes, 64*(2), 93-110.
- Mitchison, D., Hay, P., Slewa-Younan, S., & Mond, J. (2014). The changing demographic profile of eating disorder behaviors in the community. *BMC Public Health, 14*(1), 943-952.

- Morgan, J. F., Reid, F., & Lacey, J. H. (1999). The SCOFF questionnaire: Assessment of a new screening tool for eating disorders. *BMJ*, *319*(7223), 1467-1468.
- Muazzam, A., & Khalid, R. (2008). Disordered eating behaviors: An overview of Asian cultures. *Journal of Pakistan Psychiatric Society*, *5*(2), 76-81.
- Muazzam, A., & Khalid, R. (2011). Development and validation of disordered eating behavior scale: Identification, prevalence, and difference with clinically diagnosed eating disorders. *Pakistan Journal of Psychological Research*, *26*(2), 127-148.
- Mumford, D. B., Choudhry, I. Y., & Whitehouse, A. M. (2002). Body dissatisfaction and eating attitudes in slimming and fitness gyms in London and Lahore: A cross-cultural study. *European Eating Disorders Review*, *8*, 217-224.
- National Alliance on Mental Illness. (2019). *Mental Health By The Numbers*. Retrieved from <https://www.nami.org/learn-more/mental-health-by-the-numbers>
- Nieuwsma, J. A., Pepper, C. M., Maack, D. J., & Birgenheir, D. G. (2011). Indigenous perspectives on depression in rural regions of India and the United States. *Transcultural Psychiatry*, *48*(5), 539-568.
- Park, P. J. (2012). *Teenage Eating Disorders*. Reference Point Press.
- Pearson, C. A. (2010). Measuring eating disorder attitudes and behaviors: A reliability generalization study (Doctoral dissertation), Texas University.
- Petre, A. (2019). Six common types of eating disorders (and their symptoms). *Health line*. Retrieved from <https://www.healthline.com/nutrition/common-eating-disorders>.
- Polit, D. F., & Beck, C. T. (2006). The content validity index: Are you sure you know what's being reported? Critique and recommendations. *Research in Nursing & Health*, *29*(5), 489-497.
- Raeuori, A., Keski-Rahkonen, A., & Hoek, H. W. (2014). A review of eating disorders in males. *Current Opinion in Psychiatry*, *27*(6), 426-430.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton.
- Saleem, S., & Mahmood, Z. (2012). Relationship between emotional and behavioral problems and school performance of adolescents. *FWU Journal of Social Sciences*, *6*(2), 187-193.
- Sawyer, S. M., Azzopardi, P. S., Wickremarathne, D., & Patton, G. C. (2018). The age of adolescence. *The Lancet Child & Adolescent Health*, *2*(3), 223-228.
- Shaikh, M. A., & Kayani, A. (2014). Detection of eating disorders in 16-20 year old female students-perspective from Islamabad, Pakistan. *Journal of Pakistan Medical Association*, *64*(3), 334-346.
- Suhail, K., & Nisa, Z. (2002). Prevalence of eating disorders. *Journal of Eating and Weight Disorders*, *7*(2), 131-138.

- Thomas, A. (2003). Self-Concept, weight issues and body image in children and adolescents. *Psychology of Adolescents*, 88, 17-29.
- Treasure, J., Stein, D., & Maguire, S. (2015). Has the time come for a staging model to map the course of eating disorders from high risk to severe enduring illness? An examination of the evidence. *Early Intervention in Psychiatry*, 9(3), 173-184.
- Wade, T. D. (2019). Recent research on bulimia nervosa. *Psychiatric Clinics*, 42(1), 21-32.
- Waltz, C. F., Strickland, O. L., & Lenz, E. R. (2005). *Measurement in Nursing and Health Research* (3rd ed.). Springer Publishing Co.
- Woodside, B. D., & Staab, R. (2006). Management of psychiatric comorbidity in anorexia nervosa and bulimia nervosa. *CNS Drugs*, 20(8), 655-663.
- World Health Organization. (2019). *Adolescent Mental Health*. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>
- Yin, P., & Fan, X. (2000). Assessing the reliability of Beck Depression Inventory scores: Reliability generalization across studies. *Educational and Psychological Measurement*, 60(2), 201-223.

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