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Construction and Validation of Academic Perfectionism Scale: Its Psychometric Properties

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The present study aimed at construction and validation of Academic Perfectionism Scale for university undergraduates. In Part-I of the study, an item pool was developed and items of the scale were empirically determined for content validation. Factorial validity and internal consistency was determined on a sample of 585 participants including young men (n = 228) and young women (n = 358) with an age ranging from 18 to 25 years (M = 20.84, SD = 1.632). Factor analysis revealed six factor solution, which accounted for 29.7% cumulative variance with .86 alpha reliability. The six factors were named as Parental Expectations, Doubts and Concerns on Performance Quality, Socially Prescribed Perfectionism, Personal Standards, Organization, and Parental Criticism. In part-II of the study, convergent validity was established on an independent sample comprised of University undergraduates (N = 60). Positive correlation of Academic Perfectionism Scale with Frost Multidimensional Perfectionism Scale (Frost, Marten, Lahart, & Rosenblate, 1990) provided evidence for the convergent validity of the scale.

Keywords. Academic perfectionism, multidimensional perfectionism, reliability, validity

Over the last several decades, personality researchers have struggled to understand perfectionism, which plays a very important role in a person's life, and helps an individual to lead a healthy or unhealthy life. Perfectionism is defined as the need to be perfect, or at least appear that way (Flett, Hewitt, & Heisel, 2014). Perfectionism is a trait thought to encompass positive (e.g., lofty performance) and negative tendencies (e.g., excessive stress, self-criticism) depending upon the individual and the context (Hamachek, 1978). Previously, it was thought that perfectionism was always anxious and dysfunctional (Burns, 1980; Pacht, 1984), however, the change began in 1900's,

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when it was claimed that perfectionism is multidimensional temperament, and researchers constructed multidimensional scales to imprison the construct in all its facets (Frost et al., 1990; Hewitt & Flett, 1991).

Bieling, Israeli, and Antony (2004) investigated different features of perfectionism (maladaptive and adaptive). They emphasized that it is important to study the benefits of perfectionism and side by side harmful influence of perfectionism on the life of individuals should also be known. According to Stoltz and Ashby (2007), positive or adaptive form of perfectionism is defined as gaining pleasure from attainment made from strong effort but abiding the imperfections without resorting to the ruthless self-criticism that differentiate maladaptive perfectionism. Usually, consequences of perfectionism are high inspiration to attain, positive self-concept, work extraordinary in those settings which involve cooperation, and they are not appreciative to take on management roles, but are more prone to search cooperative relationships. Whereas, maladaptive perfectionism is defined as having high personal performance standards and tendencies to be extremely self-critical in self-evaluations (Rice & Stuart, 2010). It is a neurotic or obsessive state in which individuals are never satisfied with their performance. They are to remain fearful about less than perfect results and ultimately they become victim of obsessive compulsive personality disorder.

Frost et al. (1990) developed a multidimensional model of perfectionism, distinguishing between six facets of perfectionism including *Personal Standards*, that is how a person sets his standards; *Concerns over Mistakes*, that is how much a person is concerned about his mistakes; *Doubt about Actions* which means that individual has doubts on the work he has done; *Parental Expectations*, that is parental expectations towards their children; *Parental Criticism* meaning that individual faces parental criticism when their demands are not fulfilled, and *Organization* that means individuals perform the task in a manner. Hewitt and Flett (1991) introduced an interpersonal model of perfectionism, thereby distinguishing between self-oriented perfectionism, other oriented perfectionism, and socially prescribed perfectionism. Frost's Multidimensional Perfectionism Scale (FMPS; Frost, et al., 1990) and Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991) were based on the idea that greatest perfectionism proposes greater pathology (Hamachek, 1978).

Frost, Heimberg, Holt, Mattia, and Neubauer (1993) reported that there is significant and reliable overlap between Frost's dimensions and Hewitt's measurements of perfectionism. They hypothesized that the nine subscales from both measures of perfectionism could be

summarized in to lesser number of factors. Factor 1, can be marked as Maladaptive Evaluative Concerns, comprised of doubts about action, parental criticism, parental expectations, socially prescribed perfectionism, and concern over mistakes, whereas Factor 2, can be marked as Positive Striving, composed of personal standards, socially oriented perfectionism, and organization.

There are certain cultural differences in perfectionism (Inman, Ladany, Constantine, & Morano, 2001). According to DiBartolo and Rendon (2012), mean-level aspects conceptually associated with Socially Prescribed Perfectionism (e.g., concerns over mistakes, Doubts about Action, Parental Expectations) are significantly higher among Asian Americans than European Americans. It is also reported that Personal Standards are important component of Self-oriented Perfectionism and are positively associated with academic grade-point average among female Asian American university students (Kawamura, Frost, & Harmatz, 2002). Similarly Self-oriented Perfectionism was linked with higher GPA and academic pleasure in contrast with nonperfectionism in both the Asian and European Canadian samples (Franche, Gaudreau, & Miranda, 2012**)**. In Indian culture parents have high expectations with them in academic achievement, professional, and economic triumph, and satisfying family (Inman et al., 2001).

Perfectionism has been studied with various variables in different fields of life and one of the most explored area is academic setting (Burns, 1980; Ghazal, 2012; Rice & Dellwo, 2001). It is reported that perfectionism helps in determining different behaviors and performance of students (Capan, 2010; Chang & Rand, 2000). Perfectionism has been defined in various ways, and items of different perfectionism scales depicts the variation in the content. This variation of content depicts the difference in the theoretical basis, target population, and specific settings (Stairs, Smith, Zapolski, Combs, & Settles, 2012). Literature depicts the importance of perfectionism in academic settings (DiBartolo & Rendon, 2012; Kawamura et al., 2002) but it was reported that perfectionism among students regarding their academic life cannot be appropriately measured through the general perfectionism scales (Ghazal, 2012). So keeping in view the need to measure the academic perfectionism among students, current study was designed to construct perfectionism scale. Academic Perfectionism is a phenomena which depicts high concern about ones mistakes, greater expectations about oneself, parental expectations for achievement, facing criticism from parents, doubts about ones actions specifically in academic setting (Frost et al., 1990). Though, a lot of work on students has already been done on perfectionism in European

countries but they used already developed perfectionism scales which are for general population not specifically for academic settings. Furthermore, academic perfectionism is culturally bound construct because it is different in all cultures and it is influenced by different ethical values, educational system, parenting, and religious systems (Burns, 1980). Social expectations, pressure, and family support are naturally related with the traditional values of endorsing academic excellence that are conveyed to students at their youngest age. Therefore, the current study intends to construct an indigenous scale specifically designed for academic perfectionism for Pakistani students.

In the context of the aforementioned purposes, the major objectives of the present study were:

1. To develop an indigenous scale to measure the academic perfectionism for university students.
2. To establish the psychometric properties, that is, reliability and validity indices.

Method

The present research was conducted in two parts; Part-I aimed at development of Academic Perfectionism Scale (APS) and Part-II aimed at establishing the convergent validity of the newly developed APS.

Part-I: Development of Academic Perfectionism Scale

Empirical approach was used in scale development (Cohen & Swerdlik, 2010; Worthington & Whittaker, 2006). Scale development was carried out in two phases.

Phase-I: Generation of initial item pool. An initial pool of items was generated for APS, which was based upon model of Frost et al. (1993) and existing literature on the construct of perfectionism. Moreover, second list of items was generated by consulting with teachers and students. They were asked to list the characteristics and attributes of a students with academic perfectionism according to the above mentioned model furthermore their personal opinions were also gathered.

Initially 107 items were generated and 89 items were scrutinized through a committee approach with teachers. Teachers (3 Assistant Professors & 3 Lecturers) with expertise in test construction were

involved in committee approach for the selection of items from the item pool. Items which were double barreled and overlapping were removed. Response format of APS was 5-point Likert type scale ranged from 1 = *strongly disagree* to 5 = *strongly agree*. 10 items were negatively phrased to reduce the response bias and the remaining items were positively phrased.

After finalization of items, the scale was administered in the next phase for establishing psychometric properties.

Phase-II: Dimensionality and Reliability of Academic Perfectionism Scale. This phase aimed at exploring the factor structure and establishing the psychometric properties of APS.

Sample. The sample of the study consisted of 585 university students including young men (n = 228) and young women (n = 358) from Rawalpindi (Quaid-i-Azam University, COMSATS, NUST, and Fatima Jinnah Women University) and Lahore (Government College University). Participants' age ranged from 18 to 25 (M = 20.84, SD = 1.63) and convenience sampling technique was used to approach the participants.

Measure. The initial form of the APS comprising 89 items was used to collect the data. Ten items were negatively phrased and the remaining items were positively phrased. The five response categories ranged from *strongly disagree* (1) to *strongly agree* (5). The minimum possible score was 89 and maximum score could be 445. The greater score on APS indicated higher level of academic perfectionism and low score reflected low level of academic perfectionism.

Demographic information was also obtained along with the questionnaire.

Procedure. First of all, university authorities were sent the brief aims and objectives of the research. Permission was taken from their particular head of departments and then through the help of clerical staff and teachers data was collected in the class room setting. After taking their informed consent, brief introduction about the research was given to the participants and all the ambiguities were cleared. Confidentiality of the data was assured to the participants.

Results and discussion. Exploratory factor analysis was used to group homogenous items of the newly developed scale. The conditions which ascertain factor analysis, were checked. To determine the dimensionality and construct validity of the scale, 73 items were factor analyzed through Principal component analysis. The value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy was

.853 showed that data is meritorious for factor analysis (Kaiser, 1974). Furthermore, Bartlett's Test of Sphericity was also found to be significant that confirmed appropriateness of further analysis. Correlation matrix also confirmed appropriateness of matrix for factor analysis (Field, 2005).

Exploratory factor analysis was carried out to assess the data of 585 participants through Varimax rotation method. Through principal component analysis, 6 factor solutions was obtained that converged in 40 iterations by following the criterion of Kaiser (1960). All the six factors were clear, well defined, interpretable, and theoretically reliable. 41 items were retained after factor analysis and significant amount of variance (29.7%) is accounted for the retained factors.

The new emerging structure was quite comparable to the dimensions explained by Frost et al. (1993). Furthermore, items related to Self-oriented Perfectionism were closely overlapping with Personal Standards so emerged with this subscale. Doubts about Actions and Concern over Mistake were two different subscales in the model, however, in present study they are forming one factor named Doubts and Concerns on Performance Quality.

The content of each item of the six subscales was analyzed under the conceptual model of Perfectionism proposed by Frost et al. (1993). T retaining structure of newly developed APS revealed that it is somewhat different to the factor structure explained by the model. An inspection of the items related to each factor demonstrated that all factors are theoretically different from each other.

Table 1

The Factor loading, Eigen values, and Variance explained by six factors of Academic Perfectionism Scale (N=585)

Sr #	Item in initial form	I	II	III	IV	V	VI
		PE	DC	SPP	PS	O	PC
1	18	**.51**	.01	.01	.10	.03	.01
2	24	**.53**	.03	.08	.06	-.01	.03
3	36	**.52**	.08	.17	-.04	.02	.19
4	41	**.40**	.04	.03	.12	.14	.04
5	49	**.52**	-.01	.17	.04	.01	-.05
6	57	**.46**	.06	.24	.16	.03	.01
7	75	**.57**	-.01	.26	.14	.03	.07
8	98	**.47**	.03	.32	.11	.07	.03
9	1	.07	**.38**	-.03	.01	.24	.01
10	13	.01	**.44**	-.04	-.34	.04	.08

Continued…

Sr #	Item in initial form	I	II	III	IV	V	VI
		PE	DC	SPP	PS	O	PC
11	22	.33	**.37**	-.01	-.03	.11	-.11
12	28	.07	**.56**	-.04	-.17	-.03	-.09
13	45	.33	**.47**	.01	-.01	.13	.05
14	47	.05	**.55**	-.06	.12	.32	-.01
15	48	.07	**.59**	-.01	.07	.13	.11
16	61	.07	**.67**	.05	-.01	-.05	.01
17	62	.08	**.68**	.05	.04	-.03	.02
18	70	.29	**.48**	.04	-.06	.02	.05
19	84	.10	**.55**	.10	-.01	.08	-.04
20	87	.03	**.61**	.07	-.04	-.01	.01
21	96	.03	**.54**	-.05	-.16	.04	.09
22	59	.16	-.12	**.50**	.08	.13	-.03
23	64	.33	.07	**.45**	-.01	-.07	.17
24	76	.17	.05	**.49**	-.02	.15	.19
25	82	.31	.14	**.36**	.19	.12	.14
26	92	.03	-.01	**.55**	.03	-.11	.02
27	15	.08	-.03	-.02	**.46**	.03	.01
28	23	.07	-.09	.06	**.56**	.24	-.07
29	38	.29	-.01	-.03	**.51**	.12	-.04
30	42	.22	.03	.03	**.46**	-.02	-.15
31	50	.12	.27	-.04	**.40**	.08	-.14
32	89	-.01	-.06	.18	**.49**	.07	-.15
33	12	.06	-.01	.09	.19	**.48**	-.08
34	25	.23	-.03	.08	.22	**.41**	-.01
35	35	-.03	.10	.22	.17	**.49**	.10
36	44	.26	.03	.33	.14	**.35**	-.06
37	86	.07	.01	.35	.18	**.36**	.07
38	26	-.13	.07	.03	-.25	.10	**.50**
39	55	-.28	.12	.05	-.26	.10	**.52**
40	74	.01	.13	.01	-.02	.08	**.57**
41	91	.24	.24	.05	-.04	-.05	**.49**
Eigen values		11.20	7.61	3.28	2.94	2.20	1.91
% of variance explained		6.93	6.80	5.19	4.41	3.49	2.91
Cumulative variance		6.93	13.73	18.92	23.34	26.84	29.76

Note. PE = Parental Expectations; DC = Doubts and Concerns on Performance Quality; SPP = Socially Prescribed Perfectionism; PS = Personal Standards; O = Organization; PC = Parental Criticism. Boldface are the items having acceptable factor loading on a respective factor as per defined criteria.

Table 1 displays that as a result of Varimax rotation method, six well defined factors are established. Items with .35 and more factor loadings; not loaded on two or more than two factors were retained. Items having double loading more than .35 were discarded. Keeping in view the content validity items were retained. Final number of

items is 41 items out of 89 loading on six factors factors as shown in Table 1 with factor loading more than .35.

Four subscales including Parental Expectations, Parental Criticism, Socially Prescribed Perfectionism, and Doubts and Concerns on Performance Quality subscales are maladaptive while Personal Standards and Organization subscales are adaptive in nature.

Factor-I (Parental Expectations). Items loaded on factor-I (items no. 1-8) are loaded freely and show high loadings (.51, .53, .52, .40, .52, .46, .57, 47) and consist of 8 items of Parental Expectations and explained 6.93% variance.

Factor-II (Doubts and Concerns on Performance Quality). Thirteen items (items no. 9-21) have independent loading on this factor. They display high > .3 loading (e.g. .38, .44, .37, .56, .47, .55, .59, .67, .68, .48, .55, .61, .54 and 6.80% variance is accounted for by this factor.

Factor-III (Socially Prescribed Perfectionism). Five items (items no. 22-26) had independent loadings on factor-III. They displayed above .3 loading (.50, .45, .49, .36, .55) and 5.19 % variance is accounted by this factor.

Factor-IV (Personal Standards). Six items (items no. 27-32) had high > .3 independent loading on factor-IV with loading of (.46, .56, .51, .46, .40, 49) were retained. 4.41% variance is accounted for by this factor.

Factor-V (Organization). Five items (items no. 33-37) had high > .3 independent loading on factor-V with loading of (.48, .41, .49, .35, .36) respectively and explained 3.49% variance.

Factor-VI (Parental Criticism). Four items (items no. 38-41) had high > .3 independent loading on factor-VI with loading of (.50, .52, .57, .49) respectively 2.91% variance is accounted for by this factor.

Reliability Analysis

In order to assess the psychometric properties alpha coefficients, means, standard deviations, and correlations were computed.

Table 2

Means, Standard Deviations, Alpha Reliabilities, and Correlation Matrix of Subscales of Academic Perfectionism Scale (N=585)

Scales	*M*	*SD*	*α*	PE	DC	SPP	PS	O	PC	Total
PE	34.43	4.31	.73	--	.21**	.49**	.29**	.34**	.01	.63**
DC	41.76	9.79	.83		--	.14**	.01	.11**	.25**	.74**
SPP	18.95	3.20	.60			--	.16**	.39**	.08*	.53**
PS	22.17	4.72	.63				--	.36**	.29**	.41**
O	16.85	4.06	.63					--	.01	.56**
PC	9.32	3.18	.64						--	.25**
Total	143.55	16.08	.82							--

Note. PE; Parental Expectations, DC = Doubt and Concerns; SPP = Socially Prescribed Perfectionism; PS =Personal Standards; O = Organization; PC = Parental Criticism, APS = Academic Perfectionism Scale.
**$p < .000$

Table 2 shows mean, standard deviation, alpha reliability, and correlation matrix of subscales of academic perfectionism scale. APS (α = .82) indicates acceptable to satisfactory level of reliability coefficients ranging from .60 (Socially Prescribed Perfectionism) to .83 (Doubt and Concerns). Results of Pearson correlation show that score on total APS has significant and positive correlation with all its subscales.

Part-II: Convergent Validity

Sample

Sample consisted of 60 undergraduate students (young men = 30 and young women = 30) of Psychology department, University of Sargodha. Age range of the students was 18-26 (*M* = 20.75, *SD* = 1.45) years.

Instruments

Academic Perfectionism Scale (APS). This is a 41 item indigenous scale developed in the Part-I of the study. It consists of 6 subscales: Parental Expectations (1-8), Doubts and Concerns on Performance Quality (9-21), Organization (22-26) Personal Standards (27-32), Parental Criticism (33-37), Socially Prescribed Perfectionism (38-41). All the items in the final APS were positively phrased. It is based on 5 point Likert scale (1= *strongly disagree* to 5= *strongly*

agree). Total score ranges from 41-205 with higher scores indicating higher level of academic perfectionism. If required, score on maladaptive perfectionism can be computed by getting sum of four subscales; Parental Expectations, Parental Criticism, Socially Prescribed Perfectionism, and Doubts and Concerns on Performance Quality subscales. Adaptive perfectionism can be computed by taking sum of the scores obtained by Personal Standards and Organization subscales, if needed.

The internal consistency of the measure was .82 whereas internal consistency of its subscales was .68 for parental expectation, .61 for Doubts and Concerns on Performance Quality, .56 for Socially Prescribed Perfectionism, .72 for Personal Standards, .64 for Organization, and .67 for Parental Criticism.

Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990). This is a 35-items measure consisting of six perfectionism components: "Concern over Mistakes" which includes 9 items (item no., 9, 10, 13, 14, 18, 21, 23, 25, & 34), "Personal Standards" having 7 items (item no. 4, 6, 12, 16, 19, 24, and 30), "Parental Expectations" which includes 5 items (item no. 1, 11, 15, 20, 26), "Parental Criticism" having 4 items (item no. 3, 5, 22, 35), "Doubts about Actions" having 4 items (item no. 17, 28, 32, 33) and "Organization" which includes 6 items (item no. 2, 7, 8, 27, 29, 31). Initial evidence with female college students indicates that the scale has adequate reliability and validity (Frost et al., 1990). Higher scores reflect greater perfectionism. There were no reverse coded items in the scale.

The original study found that the FMPS had a Cronbach's alpha of .91, with subscales Cronbach's alpha ranging from .77 to .94, as well as high correlations with other measures of perfectionism (Frost et al., 1990). Internal consistency for subscales is found as .77 for Concern over Mistake, .75 for Personal Standards, .76 for Parental Expectations, .77 for Parental Criticism, .78 for Doubts about Actions and .79 for Organization. It is regarded as internally consistent, reliable over time and displays sound concurrent validity (Frost et al., 1993; Frost et al., 1990).

Procedure

Both scales were administered on the students in classroom settings. Before administration they were briefed about the purpose of study and they were ensured that the confidentiality and privacy of their data will be maintained. At the end of data collection they were apprised for their cooperation.

Results

Convergent validity was established by exploring the correlation between newly developed APS and FMPS.

Table 3

Correlation of Total Academic perfectionism Scale with Frost Multidimensional Perfectionism (N = 60)

Scales	FMPS
APS	.75**
PE	.31*
DC	.69**
SPP	.41**
PS	.75**
O	.43**
PC	.53**

Note. APS = Academic Perfectionism Scale; PE = Parental expectations; DC = Doubts and Concerns on Performance Quality; SPP = Socially Prescribed Perfectionism; PS = Personal Standards; O = Organization; PC = Parental Criticism; FMPS = Frost Multidimensional Perfectionism Scale.
*$p < .05$. **$p < .01$.

The results indicate that FMPS correlates positively and significantly with APS ($r = .75$, $p < .01$) and also with its subscales parental expectations ($r = .31$, $p < .05$), Doubts and Concerns on performance quality ($r = .69$, $p < .01$), Socially Prescribed Perfectionism ($r = .41$, $p < .01$), Personal Standards ($r = .75$, $p < .01$), Organization ($r = .43$, $p < .01$) and Parental Criticism ($r = .53$, $p < .01$).

Discussion

The present study was designed to develop an indigenous self-report APS. Frost et al.'s (1993) model was followed because it is combination of the existing models and explains perfection in best way. Exploratory factor analysis revealed six well established factors with 41 retained items. Personal Standards and Organization were related to adaptive form of perfectionism, while, socially prescribed Perfectionism, Parental Expectations, Parental Criticism, and Doubts and Concerns on Performance Quality are related to maladaptive form of perfectionism.

The first factor measures "Parental Expectations", which reflects that parents set high expectations from their children academic

performance and want to see them on highest position. Pakistani parents give extra homework, assignments, limited time spent in leisure activities, and pay for private tutoring lessons (e.g., in music, language, computer science). Children also do well in school because their parents, teachers, and their peer group expect it, whereas higher demands of parents regarding academic performance lead the students to maladaptation (Mobley, Slaney, & Rice, 2005).

Items of the second factor show that how a person is concerned about his mistakes and has doubt about his actions so is labeled as 'Doubts and Concerns on Performance Quality'. This factor shows that when a person is trying to be perfect and struggle to become perfect he become more curious and concerned about his mistakes and critically analyze his mistakes. A study was conducted by Butt (2010) found that Concern over Mistake and Doubt about Actions are considered as maladaptive nature of perfectionism within Pakistani cultural context and it is found to be positively related with the psychological distress among Pakistani citizens. According to Chang (1998), Asian American students reported more concerns about making mistakes, and greater self-doubt than Caucasian students. According to their result that Asian American students tend to be more wary of making mistakes and to harbor more self-doubt than Caucasian students. It may be the result of high demands placed on them by their parents which ultimately make students overly concerned and negatively influence their psychological life. Brown (2011) also factor analyzed Frost Multidimensional Perfectionism Scale and found that there are four subscales of perfectionism, because Concern over Mistake and Doubts about Action were combined at one factor because of having similarity of items. Perfectionism is a personality construct and differs from individual to individual and from culture to culture. In every culture people have different thinking's about perfectionism and have different personalities and understandings. That can be the reason that in our culture both these subscales were combined under one factor because of having similarity of concepts.

Items in the third factor revealed that how other people demand perfectionism so this factor is called as 'Socially Prescribed Perfectionism'. High levels of Socially Prescribed Perfectionism (when combined with high levels of Self-oriented Perfectionism) represent a fully functioning subtype in which the values promoted by social agencies are closely associated with those recognized by the individual. According to Hassan, Abd-El-Fattah, Abd-El-Maugoud, and Badary (2012), Socially Prescribed Perfectionism is a maladaptive kind of perfectionism, and it is linked with negative educational

results. For example, Socially Prescribed Perfectionism shows positive association with lower intensity of academic attainment among university students (Blankstein & Winkworth, 2004). As our society and culture has set many rules for us and they expect us to show excellent academic performance.

Fourth factor is labeled as "Personal Standards" in which person makes high standards for himself, and want to be perfect in his field. It is adaptive form of perfectionism, because students make standards to achieve their goals. These standards help them to enhance quality of their performance, opportunities for improvements and are essential to the achievement of overall quality.

Fifth factor is labeled as "Organization" that how people do the work in an organized way, and it is the most important factor of perfectionist personalities. To achieve academic goals and become perfectionist in his task, organization is an important factor.

The last factor is "Parental Criticism". Parents have high expectations with their children regarding academic performance and when they did not meet those expectations they criticize them. All six factors were clear, well defined, interpretable, and theoretically reliable. All these six factors equally explained 29.76% of the total variance (see Table 1).

An important question in perfectionism literature is whether the construct is generalizable in various cultures or not. Several theorists recommended that perfectionism is a culturally bound construct because Concerns over Mistakes, Doubts about Action and Parental Expectations are significantly higher among Asian Americans than European Americans (Kawamura et al., 2002).

Asian Americans have great worry about meeting high Parental Expectations (Peng & Wright's, 1994). This may be because of the reason that in Asian cultures, social expectations, social pressure, and family support are naturally related with the traditional values of academic excellence that are conveyed to students at their youngest age (Yee, 1992). Parents and relatives have high expectations with their children and they want to see them perfect and better than other children. Similarly, Asian American university students have high scores on doubts about actions, concerns regarding making mistakes, and greater Parental Expectations, and they faced more criticism from parents than Caucasian American students (Chang, 1998).

Examination of scale and subscales of academic perfectionism revealed that the structure of newly developed scale was a bit different from the dimensions explained by Frost et al. (1993), because Doubts and Concerns on Performance Quality were having similar items, so

they were combined in second factor. According to Frost et al. (1995) there are six well defined and valid subscales of perfectionism. Other researchers also factor analyzed this scale and found four or less than six subscales. It may be because of cultural variations (Harvey, Pallant, & Harvey, 2004). It was also found that Concern over Mistake and Doubts about Actions items may unite under one factor as both subscales constantly explain association (Zwick & Velicer, 1986). Perfectionist students when see that there are mistakes in their tasks they become more critical for themselves and have doubt on their work. It might also be possible that in our culture doubts about actions and concerns over mistakes are having same background and similar meanings, therefore, they are combined under one factor. Items of Self-oriented Perfectionism were combined with Personal Standards because of similarity of items, and according to researches Personal Standards is an important ingredient of Self-oriented Perfectionism (Kawamura et al., 2002). It might be possible because both these subscales are perceived similar in Pakistani culture, because both Self-oriented Perfectionism and Personal Standards are related to one's self. For example, when a student is concerned about his/her academic achievement and perfectionism s/he makes standards for herself/ himself.

The present study was also meant to find the convergent validity of newly developed APS. For this purpose, associations between APS and the FMPS were calculated. Results revealed that both scales were positively correlated with each other. Findings of the present study provided sufficient evidence for convergent validity of APS.

Limitations and Future Recommendations

The study has limited generalizability as the data was collected from only six universities of Punjab. So, in order to enhance the external validity further researches should be conducted on more than six universities and diverse sample. Equal numbers of students were not recruited from all universities, classes and departments, which can also influence the findings. So for future, it is suggested that work must be done on equal number of participants from different universities, classes and departments, so that a broad and clear picture of the data must be obtained. In the present study only two variables were used with convergent validity. It is recommended that in future certain other variables like social desirability, personality traits etc. should be used in order to get more broad and precise picture.

Practical Implications

In every culture academic perfectionism varies as it is a culturally bound phenomenon. According to Butt (2010) three dimensions of perfectionism Concern over Mistake, Parental Criticism, and Doubt about Actions negatively influence individuals and three dimensions Personal Standards, Parental Expectations, and Organization are positive in a Pakistani context (Butt, 2010). So this new scale of academic perfectionism will help Pakistani teachers, educationalists, and psychologists to know that how academic perfectionism effects students' performance in our culture. It will help them to develop appropriate strategies for students through which their level of maladaptive perfectionism can be reduce and they can use positive and adaptive ways to handle their problems. This will also help the parents to have positive expectations from their children and rather than becoming more critical to their mistakes they must help them to reduce their tensions and problems regarding their academic performance, and use adaptive form of perfectionism while dealing with children. The results of the study will be helpful for psychologists who are working in educational settings. They can facilitate the students to develop an organized way to achieve their goals in order to get the higher level of academic achievement.

Conclusion

The present study was designed to develop a reliable and valid APS for university undergraduates. By the help of measuring academic perfectionism of students, it may help teachers and parents to deal with the students accordingly. It will further help campus counselors to measure the level of academic perfectionism among students and to guide the students in the light of information gathered through scale scores.

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