

Research Article

Fear of Missing Out in University Students: A Psychometric Study

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Abstract

Background: Fear of missing out is a subcategory of social anxiety and an upsurge issue which may lead university students to experience many detrimental effects on their well-being.

Objective: To develop an indigenous scale with sound psychometric properties to measure fear of missing out by highlighting the culture-specific experiences of university students.

Method: A mixed cross-sectional research design was used. This study was carried out from October 2020 to May 2021. Data was collected from different government and private universities in Lahore. Initially, 82 items were generated by conducting interviews with university students. After eliminating dubious items, a list of 57 items was generated. These items were given to a committee of experts for empirical validation. After that, a list of 48 items was finalized. Then these items were piloted on 14 university students. Finally, this scale along with the demographic form was administered to a sample of 400 university students (men=194, women=206) in the age range of 18 to 28 years (M=21, SD=2.15) using purposive sampling technique.

Results: Exploratory Factor Analysis revealed four-factor structures of fear of missing out scale named, Low Self-Esteem, Lack of Contentment, Apprehensions, and Jealousy. In each subscale, no. of items ranges from 6 to 14 items. Results revealed the newly developed scale has a high internal consistency of $\alpha=.73$, test-retest reliability $r=.89$, and good concurrent validity $r=.34$. Results also revealed that 14.0% of participants have mild, 37.3% have moderate, 32.0% have severe and 16.8% have a very severe level of fear of missing out.

Conclusion: As a result of this study a 41-items self-reported measure of fear of missing out for university students, having sound psychometric properties was developed.

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Keywords | Fear of missing out, university students, social anxiety, Mental health problems, Prevalence rate, Scale development, Psychometric properties, collectivistic culture, Pakistan.

Introduction

Fear of missing out is a sub-category of social anxiety in which a person is concerned about losing out on valuable experiences that others have.¹ According to

the self-determination theory, if an individual's psychological needs, such as competence, autonomy, and belongingness, are not met, he or she risks losing psychological well-being.² Need-to-belong theory suggests that fear of missing out is driven by uncertainty about social connectivity and belongingness. The more eager a person is to join and have a strong wish to belong, the more likely they are to experience fear of missing out, a phenomenon particularly prevalent in collectivistic cultures.^{3,4}



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This fear is defined as a negative emotional state which further generates an anxiety mindset.⁵ Low-level self-esteem, self-compassion & a higher level of loneliness is also associated with fear of missing out.⁶ FOMO has been related to excessive dissatisfaction and bad impacts on our physical and mental health, such as mood swings, feelings of inadequacy, intense social anxiety, and increased pessimism and depression.⁷ As a result, it is critical to assess the persons with FOMO to protect them from the negative physical and mental effects of the condition.

Collectivistic cultures like Pakistan tend to promote the experience of social anxiety where a person's relationship is based on interconnectedness, as individuals concentrate more on what others are seeking.^{4,8} However, in an individualistic culture, self-reliance, and independent self are more emphasized⁹ resulting in a reduced interest in what others are doing and focusing more on inner goals, establishing individuality, and promoting uniqueness by avoiding the effect of surroundings social environment.

The scales used to measure FOMO had different conceptual and methodological issues. To begin with, there were certain situation-based FOMO measures available in other countries, but none of them took day-to-day individual experiences into account.¹⁰ For example, Przybylski and colleagues developed the first fear of missing out on the scale (FOMOs) based on situational factors.⁵ It was a 10-item-unidimensional scale, which explored this concept in the context of social media by emphasizing more on those missed experiences when with friends or on social media, totally neglecting a person's evaluations. As this scale was adapted using adolescents, therefore, it could not be used in the current study. The FOMO scale is frequently used in non-clinical settings to assess FOMO, and it has been the subject of numerous empirical investigations. Further, scale adaptation would not have given the real-life experience and expression of FOMO in our own collectivistic culture. Similar to the Tresnawati Scale of FOMO for Social Media¹¹ and the Scale of Alcohol-related FoMO,¹² this scale was created for drug-related unique conditions. Second, the fear of missing out on the scale was primarily divided into dimensions based on the division of the fear of missing out on the scale.

Specific experiences like FOMO are usually measured

by social anxiety measures or by gold standard depression and anxiety measures. The indigenous Social Anxiety Scale¹³ is also not appropriate to measure this fear of missing out among Pakistani university students because the social anxiety scale is generic and assesses people's fear of being judged by others and effort to escape from social situations. There is scarcity of literature on fear of missing out in Pakistani university students. Therefore, to explore the prevalence and cultural experience it was required to develop a valid and a reliable scale of FOMO. Current study aimed to yielded a measure of FOMO with sound psychometric properties for early identification, assessment, and prevalence of a construct that may lead to detrimental consequences otherwise. Assessment of FOMO may further help to devise intervention plan for the suffering individuals.

Methods

This cross-sectional research design was carried out from October 2020 to May 2021. Before conducting the research, an institutional permission letter was sought out from the School of Professional Psychology UMT, which approved the project regarding the ethical dimensions. Initially, a small sample of 12 university students (men=6, women=6) was selected using the purposive sampling technique, between the age range of 18 to 28 years (M=21, SD 2.15) from different governments and private universities in Lahore. Those university students who were studying BS I, II, III & IV, and whose parents were alive were chosen. In the first phase of generating items, university students were approached by the researcher. Participants were interviewed in semi-structured interviews lasting an average of 20 minutes. The researcher recorded the verbatim of the participants and subsequently transcribed them into phrases. For this current study, FOMO was operationally described as, the general anxiety and sometimes overwhelming fear of missing out on a rewarding experience that others are experiencing.¹

Participants were asked about FOMO using an open-ended question based on the operational definition in which they were required to share their experience of missing out. Participants were further asked probing questions to clarify any ambiguity. Each interview with participants lasted 20 minutes and their interviews were recorded in the written form of their verbatims. All the

responses from the participants were collated in written form as phrases which were further analyzed by two clinical psychologists independently. Initially, a list of 82 items was compiled however, after omitting overlapping and unclear items only 57 items were retained.

In the 2nd phase of the study, content validity was established. Five clinical psychologists with at least three years of experience, working as student counselors were given the operational definition of FOMO and were asked to score each item on a 4-point (1–4) rating scale of "1 (not relevant), 2 (somewhat relevant), 3 (very significant), and 4 (extremely relevant). Content Validity Index for the items (I-CVIs), and the scale (S-CVI) were calculated. For (I-CVIs) the items with an I-CVI of less than the value of .78 were eliminated¹⁴, in this way 9 items were discarded and 48 items were retained for calculating the additional psychometric properties of FOMO. Furthermore, the average of the scale (S-CVI) was also calculated, recommended to be 0.90 or higher.¹⁵ The S-CVI of the scale was found to be .90 indicating a good content validity. After content analysis by experts, a list of 48 items was converted into a self-reported measure based on the 4-point Likert Rating Scale, (0) not at all, (1) rarely, (2) sometimes, (3) always. After that, this newly developed scale was piloted on 14 participants (men= 7, women= 7) from the post-graduate level of both private and government sectors, using the purposive sampling technique. This phase aimed to check the layout, reader friendliness, and understanding of the scale in which respondents reported no ambiguity.

After pilot testing, the next step was to establish the psychometric properties of the scale. For this purpose, 400 university students were selected using a purposive sampling technique. The measures for this final stage of the study include a demographic sheet (consisting of age, gender, parental education, and family system), an indigenously developed FOMO scale, and the western scale of FOMO.⁵ The western scale of FOMO⁵ was used to find out the concurrent validity of the newly developed scale. It is a unidimensional 10-item self-report questionnaire that demonstrated a high internal consistency value of $\alpha = .87$ to $.90$ and its convergent validity was found to be $r = .40$ with the social media engagement measure. Informed consent was taken from participants and ethics such as privacy, confidentiality,

and secrecy were also followed. Participants were given a concise explanation of the study's goals. At the end of data collection, a debriefing session was also held to address any study-related concerns of participants or feedback related to the research.

Results

The descriptive analysis showed that the sample consisted of slightly more women 51.50% than men 48.50%. There was an almost equal percentage of the participants studying in the government and private institutes. Almost 30.30% had 1st birth order. Concerning parents, almost 39.80% had a father with an education level up to matric, and the majority of mothers (41.50%) with education up to intermediate and above. 57.80% of participants lived in the nuclear family system.

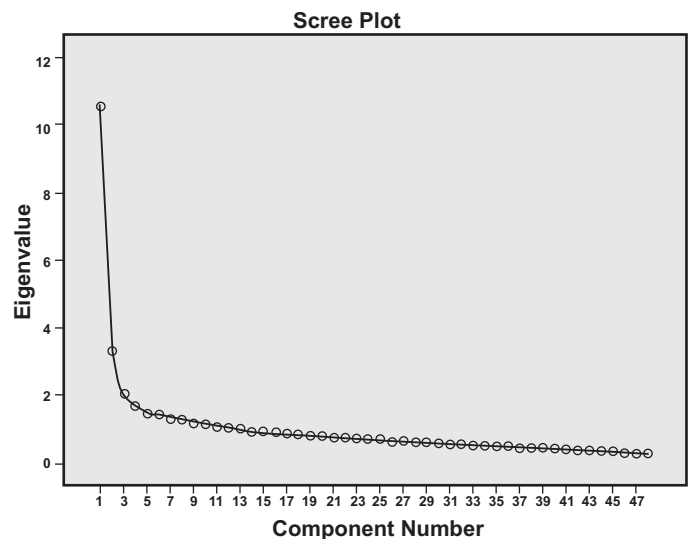


Figure 1: Scree Plot Showing Extraction of Factors of Fear of Missing Out Scale (FOMO)

Exploratory Factor analysis (EFA) was carried out to find the underlying factors and pattern of fear of missing out experienced by university students. For this purpose, the principal component analysis was used with varimax rotation to extract a 4 factors solution retaining 48 items of the scale. The Kaiser Myer Olkin value was .89 and Bartlett's test was found to be significant ($p < 0.001$) showing the adequacy of data to run factor analysis. The factors were determined based on criteria where the Eigenvalue was >1 . A Scree plot was used to analyze the factor structure which is the graphical representation of the Eigenvalue. The number of factors that came under the elbow of the scree plot with a factor loading

Table 1: Factor Analysis of Fear of Missing Out Scale (FOMO) for University Students

S. No	Item No	F1	F2	F3	F4	r
	1	.54				.41
	3	.57				.53
	5	.57				.38
	7	.65				.53
	8	.54				.55
	9	.59				.53
	13	.57				.48
	14	.49				.48
	25	.47				.51
	28	.52				.52
	29	.51				.49
	36	.48				.49
	37	.55				.39
	39	.48				.51
	15		.52			.51
	19		.61			.30
	21		.45			.42
	26		.46			.38
	27		.48			.50
	30		.59			.38
	31		.40			.53
	32		.49			.41
	34		.63			.23
	35		.49			.51
	38		.66			.39
	47		.45			.33
	16			.43		.49
	17			.44		.29
	18			.59		.29
	20			.40		.38
	22			.61		.38
	44			.40		.26
	45			.60		.33
	46			.53		.40
	48			.51		.31
	6				.51	.21
	11				.48	.23
	24				.40	.13
	33				.45	.20
	40				.40	.11
	42				.56	.22
Eigen Values		6.00	5.49	3.81	2.19	
% of Variance		12.50	11.44	7.95	4.57	
Cumulative %		12.50	23.94	31.90	36.48	
Cronbach Alpha		.86	.84	.71	.56	

Note: N=400. Factor loading >.40 or above is mentioned in the table

of above .30 was included. The 4-item solution was found to be the best fit model as it showed a thorough and fine picture of a very minimum number of doubtful and cross-loaded items while seven items were excluded as their factor loading value was less than .40. The factors of fear of missing out were named Low Self-Esteem, Lack of Contentment, Apprehension, and Jealousy.

Exploratory factor analysis of the FOMO scale is shown in table 1 with their Cronbach alpha values. Along with the Cronbach alpha values, internal consistency, concurrent validity, test-retest reliability, and the content validity of the newly developed indigenous scale were also calculated. The content validity of the scale (S-CVI) was found to be .90 indicating a good content validity. The scale also showed a good internal consistency i.e., .73. For the calculation of test-retest reliability, 15 participants were reevaluated after two weeks and showed a value of $r=.89$, $p<0.001$, indicating a significantly high correlation between the scores of two administrations of the FOMO scale. Concurrent validity of the FOMO scale with an already developed western scale of FOMO⁵ was also founded to be $r=.34$, $p<0.001$, reflecting high concurrent validity of the developed scale.

The first factor of scale contained 14 items. A high score on this sub-scale denotes the feeling of inferiority and worthlessness by compared with others therefore named Low Self-Esteem. The second factor contained 12 items. A high score on this sub-scale denotes a mental or emotional state of dissatisfaction with one's possessions and situations and is labeled as a Lack of Contentment. The third factor of scale contained 9 items. A high score on this factor denotes anxiety or fear that something bad will happen and is labeled as Apprehension. The fourth factor of scale contained 6 items. A high score on this sub-scale denotes thoughts of insecurity, concern, and feelings of jealousy so it was labeled as Jealousy.

Table 2 shows that the factors of fear of missing out have a significant positive relationship with each other.

Table 3 shows the prevalence rate of fear of missing out is very alarming among Pakistani university students. Results revealed that 14.0% of participants have mild, 37.3% have moderate, 32.0% have severe and 16.8% have a very severe level of fear of missing out.

Table 2: Mean, Standard Deviation, and Inter-factor Correlation between Factors of Fear of Missing Out Scale and its Total

Variables	n	M	SD	FOMOF1	FOMOF2	FOMOF3	FOMOF4	FOMOT
FOMOF1	400	27.50	7.98	--				
FOMOF2	400	20.68	6.40	.70***	--			
FOMOF3	400	22.30	5.13	.43***	.35***	--		
FOMOF4	400	11.74	3.33	.32***	.48***	.18***	--	
FOMOT	400	82.22	17.80	.88***	.86***	.64***	.56***	--

Note: FOMO= Fear of Missing Out, n=sample size, M=Mean, SD=Standard Deviation *p<.05. **p<.01. ***p<.001

Table 3: Prevalence of Fear of Missing Out (FOMO) in University Students (N=400)

	Mild		Moderate		Severe		Very Severe	
	f	%	f	%	f	%	F	%
F1 Low Self-Esteem	46	11.5	160	40.0	121	30.3	73	18.3
F2 Lack of Contentment	37	9.3	175	43.8	100	25.0	88	22.0
F3 Apprehensions	53	13.3	120	30.0	143	35.8	84	21.0
F4 Jealousy	35	8.8	124	31.0	162	40.5	79	19.8
FOMO_TOTAL	56	14.0	149	37.3	128	32.0	67	16.8

Note: f= Frequency, %=Percentage, FOMO= Fear of Missing Out

Discussion

This research has made a major contribution to culture-specific manifestation, presentation, and prevalence of fear of missing out. In the current study university students of Pakistan were selected as the target population because of the two reasons. Firstly, literature revealed that university period is the stage where a person becomes more vulnerable to have mental health problems.¹⁶ Secondly, fear of missing out is more prevalent in collectivistic culture⁸ so it was important to assess the prevalence rate of FOMO among Pakistani university students.

Findings of the factor analysis revealed four factors for FOMO namely Low Self-Esteem, Lack of Contentment, Apprehension, and Jealousy. The first factor of FOMO entitled as Low self-esteem, mainly related to feelings of inferiority, and worthlessness compared with others. In collectivistic cultures like Pakistan, the rates of low self-esteem among people are higher as people have more interdependent self-construct, mostly they defined their-selves by their relations with others, aiming at being accepted within the group.¹⁷ Therefore, in our culture, the expression of FOMO is more related to Low self-esteem, as self-esteem impacted the fear of missing out experience which is highly correlated with the anxiety. It is also an evaluative component of self-

concept, which triggers negative behavior and the person started to compare himself with others and feels inadequate.¹⁸

In a collectivistic culture, people prioritize negatively offending other people despite of what they actually feel about criticism, that can be the root cause of the perception of poor self-esteem. The lack of contentment also stood out very prominently in the factor structure of FOMO, which is related to the mental or emotional state of dissatisfaction with one's possessions and situations. Fear of missing out is linked to sentiments of dissatisfaction, which arise when a person envies others for having more gratifying experiences while he or she is missing out.¹ If the need for self-esteem is not fulfilled then it can lead to increased discontentment and the individuals may engage in compensatory neuroticism, including the constant fear of missing out¹⁹ as literature also revealed that lower self-esteem is linked with fear of missing out.⁶

The other significant factor of FOMO was Apprehension related to anxiety or fear that something bad will happen. A person having increased discontentment tends to focus more on certain aspects of their lives as they would not be satisfied with what they possess which results in intense preoccupation and apprehensions. Apprehensions are further linked with FOMO²⁰ as the person

may become preoccupied with missing out and would be absent from the present moment.⁵ The last factor of FOMO was Jealousy related to the thoughts of insecurity, concern, and feelings of jealousy. This component includes factors connected to the direct and indirect expressions of FOMO, which is a continuous feeling and fear that other people are having more rewarding experiences while you are missing out on something¹, which can lead to feelings of jealousy.²¹ Jealousy is the fear that others have something that one wants but doesn't have, making the person feel inferior.²²

This current scale of FOMO was quite different from the previous western scales of FOMO, although it has some similarities in its structure, its function is quite different.⁵ The western FOMO scale was unidimensional, focusing more on the public self (how others perceive) and neglected experiences regarding the private self (a person's evaluations regarding thoughts, feelings & behavior). People in collectivistic cultures tend to view a person as fundamentally connected with others as they have interdependent self-construct. They keep on thinking about what other people are doing, are eager to know about the details if they missed an event²³, and they have a high need to belong in their social groups³. Hence, they are more conscious regarding what is happening in their social connections and have more fear of missing out on things because they always wanted to be connected with what others are doing.

Fear of missing out has several detrimental consequences, including disrupting sleep²⁴ and contributing to mental health issues such as stress,²⁵ sadness, and anxiety,¹⁶ suggesting that university students with unmet psychological needs such as belonging are more likely to suffer FOMO. Current research will not only help us to understand the experience and expression of FOMO in Pakistani University Students, but will also help to identify the risk and protective factors of fear of missing out in future researches. This scale will also help us for the early identification and timely intervention of a unique form of social anxiety (FOMO) in student. With both core and culture specific expression of fear of missing out, the accuracy of assessing and screening such social anxieties among university students can be enhanced. Prevalence rate of FOMO was also assessed on a smaller scale level allowing us to get a clearer picture of the severity of FOMO anxiety.

This research study was based on participants' subjective feelings and fears of missing out at any given point in time, but we didn't have an objective assessment, of whether or not, they were missing out on anything. Future researches would be conducted on fear of missing out to know about other potential factors of fear of missing out that would explain both the feelings and outcomes among university students. More comparative studies should be conducted on fear of missing out between school, college and university population that would highlight more diversity in results. Moreover, it's a very less measured topic in Pakistan so the development of the FOMO scale may open new avenues of research in Pakistan.

Conclusion

This research study has developed a more reliable, valid, and culturally-appropriate measure of fear of missing out among university students. This scale consisting of 4 factors all reflecting ruminations to be appear in the form of apprehensions, jealousy, loss of self-esteem and contentment whereas the western scale of FOMO was consisted of an individual's opportunity to lose interaction, and ruminate about the expense of loss. This scale also revealed good internal consistency i.e., .73, test-retest reliability $r=.89$, and concurrent validity $r=.34$. The prevalence rate of fear of missing out was found to be very alarming as 14.0% of university students have mild, 37.3% have moderate, 32.0% have severe and 16.8% have a very severe level of fear of missing out.

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Conflict of Interest: The authors declare no conflict of interest.

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