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Information Seeking Anxiety among Postgraduate Students of University

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This paper aims to investigate information seeking anxiety in postgraduate students. Data were collected using questionnaire containing Information Seeking Anxiety Scale (Erfanmanesh, Abrizah & Karim, 2012) and demographic information. The sample comprised of 297 students from the Faculty of Science and Faculty of Behavioural Science of one university in Pakistan. Both descriptive and inferential statistics were applied for data analysis. The results indicated that a large majority of the postgraduate students experienced anxiety in the information seeking process. Moreover, no significant relationship was found in age, gender, faculty, publishing experience and information seeking anxiety in students. Conversely, there were significant differences in anxiety scores of students based on the program of study, stage of study, and computer proficiency. The results provide useful insights that could be used as a guide by the information professionals dealing with reference and research services, especially those engaged in designing information literacy curricula and managing information literacy instructions in Pakistan.

Keywords: Information seeking anxiety; ISAS; postgraduate students; Pakistan

The feelings of fear, apprehension and anxiety have always been demonstrated as fundamental, ubiquitous, and persistent characteristics of the information search process (Erfanmanesh et al., 2012, Kuhlthau, 1993; Naveed, 2016; Wilson, 1999; Young & Seggern 2001). These feelings cause not only “different cognitive, emotional, and behavioral effects in students” but also affect their information seeking self-efficacy and academic performance, particularly failure of searches

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for information (Erfanmanesh, Abrizah, & Karim, 2012, p. 21). If students' searches end up with failure due to anxiety, it leads to impatience, poor concentration, and even depression. Moreover, certain avoidance behaviours such as search avoidance, task avoidance, and research avoidance are also exhibited in postgraduate students as an outcome of information seeking anxiety (Naveed, 2016). Mellon (1986) explored that university students stymied in research by feelings "scary, overpowering, lost, helpless, and confused" (p. 162) and were "unable to approach the problem logically or effectively" (p. 163). If the student cannot find what he/she is looking for he/she would feel depressed and sad for the time and effort wasted (Abusin & Zainab, 2010). Further, Chowdhury and Gibb (2009) found that barriers associated with information seeking activities might trigger and heighten anxiety in information search process. Kohrman (2003) described that 'information seeking anxiety' was more common among postgraduate students because they made extensive use of information due to the complexity of their research.

Understanding the factors causing information seeking anxiety is essential for designing need-based and user-oriented contents for information literacy (IL) program. IL incorporates a set of skills requiring individuals to recognize the nature and extent of information needed and how to find, evaluate, synthesize, use, and share information appropriately, ethically, and legally in the contemporary and ever-changing information landscape (Bruce, 2004; Eisenberg, 2008). University students are trained through IL programs for efficient and effective use of current, relevant and quality information. Exploration of the negative feelings of students with regard to searching for information and how these feelings affect their information seeking tasks generate useful insights for anxiety alleviation. Increased awareness of the prevalence of information seeking anxiety among students would not only provide an opportunity to the concerned authorities in reducing anxiety among them but also help in preparing students as lifelong learners (Erfanmanesh, Abrizah, & Karim, 2014a; Naveed, 2016).

Research examining anxiety in information seeking context is meager. Most of these studies investigated anxiety in the information seeking process as a contributing factor to the library anxiety and assessed by using Library Anxiety Scale (LAS: Bostick, 1992), Multidimensional Library Anxiety Scale (MLAS: Van Kampen, 2003; 2004), and the Library Anxiety Scale (Anwar, Al-Qallaf, Al-Kandari, & Al-Ansari, 2012; Anwar, Al-Kandari, & Al-Qallaf, 2004). An extensive

search on users' anxiety revealed that only a few studies have directly addressed information seeking anxiety. Erfanmanesh et al. (2012)'s findings appeared first that had developed and validated an Information Seeking Anxiety Scale (ISAS) for postgraduate students to measure anxiety in drastically changed information environment. In another study, Erfanmanesh et al. (2014a) examined the prevalence of information seeking anxiety among postgraduate students in Malaysian university using ISAS. The results indicated that the 'barriers associated with library' was the most prevalent among postgraduates. This was followed by 'barriers with information resources', technological barriers, affective barriers, and access barriers. The 'barriers with topic identification' and computer and internet & electronic resources barriers was the least prevalent among these respondents. Moreover, a large majority (96.5%) of the sample had experienced different levels (low, mild, moderate, and severe) of information seeking anxiety.

There is no research available on Pakistani students. Moreover, the newly developed Information Seeking Anxiety Scale (ISAS) also needed to be tested on a culturally different population. It was, therefore, decided to investigate information seeking anxiety among postgraduate students of a Pakistani university using ISAS. The results of this study are likely to provide useful insight for information professionals especially reference and research librarians who manage information literacy instruction programs. The psychologist can also use findings in order to provide counseling to the students having emotional problems caused by information seeking forces. This study would be a valuable addition to the existing research on various types of academic anxieties in general and information seeking anxiety in particular.

Research Objectives

1. To determine the levels of information seeking anxiety in postgraduate students of a Pakistani university.
2. To investigate the relationship between information seeking anxiety and demographic characteristics as age, gender, faculty, level of study, publishing experience, stage of study, and computer proficiency of the postgraduate students.

Method

Sample

The sample consisted of 297 postgraduate students recruited from the Faculty of Science and of Behavioural Sciences (combining the

faculties of Economics & Management and of Social Science) of the University. These students were selected using convenient sampling technique due to the accessibility issues, time limitation, and non-availability of the students' lists along with their contacts. Moreover, most of these students, especially those who had completed their course work and working on their synopsis and thesis, visit their departments occasionally.

A total of 262 filled questionnaires were received with a response rate of 88%. The returned questionnaires were reviewed for completeness of information. Of the 262 cases, 251 provided complete data for entire survey instrument and demographic variables. The 11 cases (4.1%) with incomplete and insufficient information were excluded leaving a final response of 251 (84.5%). There were 97 boys and 154 girls, 180 MPhil students and 71 PhD students. There were 110 students from Faculty of Behavioural Sciences and 141 students from Faculty of Science. The age range of these respondents was 22 to 45 years. A large majority ($n = 177$, 71%) of the respondents fall in the age bracket of 22–28 years where as a good number of students ($n = 56$, 22%) belong to the age group of 29–33 years. This is quite encouraging that Pakistani students go for postgraduate education in early and active age of their lives. There were only a small number of participants who were above age of 34.

Assessment Measures

This study used Information Seeking Anxiety Scale (ISAS: Erfanmanesh et al., 2012) on 300 postgraduate students (59% g and 41% boys) having different subject and geographical backgrounds in Malaysia. The ISAS contained 47-statements (both positive and negative) with a 5-point Likert scale (i-e strongly agree; agree; undecided; disagree; strongly disagree). It has six dimensions: barriers with information resources (14 statements, $\alpha = .86$); computer and internet barriers (10 statements, $\alpha = .72$); barriers associated with library (11 statements, $\alpha = .81$); barriers with searching for information (7 statements, $\alpha = .80$); technical barriers (7 statements, $\alpha = .81$); and topic identification barriers (5 statements, $\alpha = .82$). For the present study alpha coefficient for overall scale was .90 indicating the higher internal reliability of the instrument.

Procedure

The questionnaire was administered to participants personally using social contacts of the researcher by visiting each department with

written permission from department head and consent of the respondents for participation in survey was sought. The teachers and the librarian of each department played a very important role in facilitation of data collection.

Results

Prior to data analysis, the negative statements were reversed so that all the statements are in the same direction. Moreover, the composite mean score for overall Information Seeking Anxiety Scale was calculated by summing up the responses of each participant to determine the levels and correlation of information seeking anxiety among students. The inferential statistics such as Pearson correlation coefficient, independent sample t-test, and analysis of variance (ANOVA) were used to determine relationships between information seeking anxiety and demographic variables. The data analysis was done by using computer software, that is, Statistical Package for Social Sciences (SPSS).

Average anxiety scores were calculated using the responses provided by 251 participants against each statement of the ISAS scale. The distribution of these average anxiety scores is plotted in Fig. 1 which shows a clear indication of normal distribution of data as it approaches the symmetrical bell-shaped pattern of normal distribution. The sample mean (μ) of the averages of information seeking anxiety scores was 3.38 and sample standard deviation (σ) of .365 which was used to identify cut off points for the levels of information seeking anxiety groups.

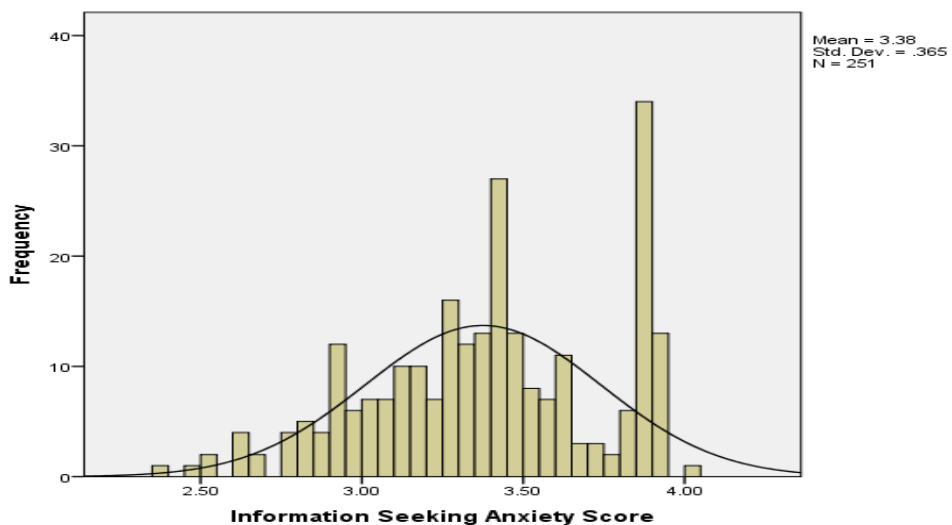


Figure 1. Histogram of averages of information seeking anxiety scores.

Anwar et al. (2004) suggested levels of library anxiety as a useful criterion to identify levels of information seeking anxiety because the data fulfilled the assumptions of normal distribution (as shown in Fig. 1). This measure has also been successfully used by Erfanmanesh et al. (2014a) to determine levels of information seeking anxiety for sub-dimensions and total scale as well. The proposed five levels of library anxiety included “no anxiety, low anxiety, mild anxiety, moderate anxiety, and severe anxiety” (Anwar et al., 2004). According to the suggested criterion, one is mild anxious if his average anxiety score is within standard deviation of the mean, $M \pm SD$. An individual has low anxiety if his mean anxiety score falls ‘outside one standard deviation but within two standard deviations from the mean’, i-e, between $M - 2SD$ and $M - SD$. On the other hand, if anxiety scores fall within $M + SD$ and $M + 2SD$, then one can say that there is moderate anxiety. There will be no anxiety if average anxiety score is below $M - 2SD$. Moreover, there will be severe anxiety if the average anxiety score is above $M + 2SD$. Based on this criterion, the associated cut off points for levels of information seeking anxiety were determined. Table 1 presents score ranges against the proposed levels of information seeking anxiety.

Table 1
Proposed Levels of Information Seeking Anxiety

Levels of anxiety	Ranges of average scores
No anxiety	0.00 – 2.64
Low anxiety	2.65 – 3.01
Mild anxiety	3.02 – 3.74
Moderate anxiety	3.75 – 4.10
Severe anxiety	4.11 – 5.00

Table 2 indicates the levels of information seeking anxiety for the 251 respondents based on the classification given in Table 1. These figures indicate that a majority of the participants (60.1%) experienced mild level of anxiety which was followed by moderate anxiety (22.3%) and low anxiety (14.3%). There were a very limited number of participants who experienced no anxiety (3.2%). However, none of the student faced severe anxiety. Nevertheless, it was interesting to note that the largest segment (82.4%) of the sample did face more than low level of anxiety.

Table 2

Respondents' Levels of Information Seeking Anxiety (N=251)

Levels of Info-seeking anxiety	<i>F</i>	%
No anxiety	8	3.20
Low anxiety	36	14.30
Mild anxiety	151	60.10
Moderate anxiety	56	22.30
Severe anxiety	0	0.00

Pearson Product Movement Correlation analysis was used to examine the relationship between age, publishing experience and information seeking anxiety of the students. The results indicated that there is no correlation between the age, publishing experience and information seeking anxiety.

Independent sample *t*-test was used to compare the mean difference in index of information seeking anxiety (ISA) between boys and girls, study programs, and faculty of the students.

Table 3

Mean Differences in Information Seeking Anxiety (ISA) Scores Based on Gender, Study Program, and Faculty (N = 251)

	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>Cohen's d</i>
Gender	Boys		Girls				
ISA	3.36	.43	3.38	.32	-.47	.63	-0.05
Study	M.Phil		PhD				
ISA	3.34	.36	3.45	.37	-2.24	.02	-0.30
Faculty	Behavioural Sciences		Sciences				
ISA	3.43	.38	3.34	.35	1.94	.05	0.24

There is no significant gender differences are seen. However, there are significant differences are found in study programs (M.Phil & PhD) and in faculty of the students (Behavioural Sciences and Sciences). The level of ISA is less in M.Phil students than PhD students. Further, findings indicate that students from the Faculty of Behavioural Sciences have higher information seeking anxiety as compared to the students of the Faculty of Science.

All the postgraduate students were asked to provide self-assessment of their computer proficiency on the scale, which was, low, moderate, and high. One-Way ANOVA was used to examine the

differences in information seeking anxiety (ISA) among students in accordance with their perceived levels of computer proficiency. The results revealed a significant difference between anxiety levels of students having different levels of computer proficiencies. Moreover, a post hoc analysis using the Tukey's HSD pair-wise comparison was utilized to locate the most different means of information seeking anxiety. The results in Table 4 indicated that mean score for the low computer proficiency is significantly different than those with high and moderate levels of computer proficiency. However, moderate level of computer proficiency does not significantly differ from high level of computer proficiency on anxiety.

Table 4

Tukey's Post-hoc for Information Seeking Anxiety and Computer Proficiency (N=251)

Computer Proficiency	N	Subset for $\alpha = .05$		F	p
		a	b		
High	61	3.28		7.44	.001
Moderate	178	3.38			
Low	12		3.71		

Note. Tukey HSD ^{a, b}.

One-Way ANOVA was used to compare mean information seeking anxiety of students from different stages of their studies. Results showed a significant difference in the level of anxiety of students from different study stages. As there is a difference, a Tukey's post hoc analysis was conducted. These results revealed significant mean difference between the anxiety level of the students who were at synopsis writing stage and those who were at the stage of course work and thesis writing. However, the mean difference between the students who were at coursework stage and thesis writing stage is not significant.

Table 5

Tukey's Post-hoc for Information Seeking Anxiety and Study Stage (N=251)

Stage of Study	N	Subset for $\alpha = .05$		F	p
		a	b		
Course Work	104	3.22		23.11	.001
Thesis Writing	49	3.33			
Synopsis Writing	98		3.54		

Note. Tukey HSD ^{a, b}.

Discussion

The finding shows very weak association between the reference/research librarians and postgraduate students because the results of this study indicated that majority of the participants experienced low level of anxiety while seeking information. These results were consistent with existing research of Erfanmanesh et al., (2014a; 2014b) as they reported information seeking anxiety as a prevalent phenomenon and a large majority of the postgraduate students experienced various levels (low, mild, moderate, and severe) of information seeking anxiety in Malaysia. These results may have very important implications on the academic performance and information seeking self-efficacy of postgraduate students because the failure in information searches due to anxiety lead to search avoidance, task avoidance, and research avoidance behaviours (Naveed, 2016). Research is mainly decision-making process and every decision that postgraduate students make needs to be informed. If the postgraduate students do not get relevant and timely information due to anxiety, the quality of their decisions and research may be compromised. Consequently, they might produce low quality work failing to be published in good quality journals. If the postgraduate students experience anxiety and cannot make effective and efficient use of databases, the money that HEC spends on database subscription (approximately 10 billion rupees annually) is likely to go wasted.

The findings of present research revealed no relationship between age and information seeking anxiety of postgraduate students. Indication of no statistical difference in feelings of information seeking anxiety among students of different ages is not quite surprising because the largest segment of the sample constituted young age group. However, these results partially inconsistent with the findings of Erfanmanesh et al., (2014b) who reported significant but negative correlation between age and information seeking anxiety with regard to “barriers associated with library”, “barriers associated with information resources”, and “affective barriers”. Gender was also not correlated with information seeking anxiety. These results are in line with Anwar et al. (2004)’s findings who reported that there were no significant differences in the average library anxiety of boys and girls. On the other hand, these results are inconsistent previous findings (Erfanmanesh et al., 2014b; Abusin, 2010; Abusin & Zainab, 2010) who reported that information seeking anxiety was sensitive to gender.

In present study significant differences were found on the basis of program of study and computer proficiency. PhD students were more anxious than MPhil students. It could be argued that PhD degree is more extensive in nature and require more knowledge that is based on research. Thereby, PhD students are required to undergo extensive literature search at different stages of degree.

This is quite surprising research experience did not effect the level of information seeking anxiety among these postgraduate students. This may be due to the lack of or even possibly non-existence of training sessions by the library staff on information seeking skills in creating awareness about formal or professional ways of information seeking.

Moreover, findings of the present study indicate that students having low computer proficiency were more anxious than the students having high as well as moderate computer proficiency. It could be for the reason that literature search requires computer proficiency, thereby, make it easier for them to explore different relevant databases to obtain required material which may be a reason to reduce their anxiety because they scored higher means and tend to agree with the statements that express information seeking anxiety.

Furthermore, results showed that the students who were at synopsis writing stage experienced more anxiety than those who were at the stage of course work and thesis writing. The indication of more anxiety at the synopsis writing stage is not surprising and quite logical because students at this stage go for an independent and intensive seeking of information as compared to coursework stage of study. Also, the students at this stage have limited understanding of the topic and its boundaries in the beginning of synopsis writing stage. In addition, the students at the course work stage mainly do directed information seeking whereas at thesis writing stage, they do more focused information seeking because they already understand the topic and have clarity of mind. These results are in contradiction with earlier researches (Erfanmanesh et al., 2014b; Bostick, 1992; Jiao, Onwuegbuzie, & Lichtenstein, 1996; Onwuegbuzie, Jiao, & Bostick, 2004) who reported linear decline in users' anxiety regarding year of study.

However the present research was conducted solely at one Public Sector University in Lahore with two faculties, that is, faculty of behavioural sciences and of sciences using quantitative research design. Therefore, the results may not be generalizable to postgraduate students of other faculties and other public or private sector universities in Pakistan. Additionally, this study deployed convenient sampling

technique for selection of the participants. As a result, there might be a bias in selection of the participants. That's why, this study didn't claim to achieve representative sample from the whole population.

The results of current study indicated the need for user-oriented information literacy program by academic libraries responsible for students' information skills development. The outcome will be information literate students who might be able to produce a higher quality and quantity of research that ultimately result in sustainable socio-economic and socio-political development of the society. Initially, the students who are at synopsis writing stage must be a focused library staff should consider them training in information seeking skills along with computer proficiency. In addition, these results could be used as guidelines by reference and research librarians to take appropriate measures for patrons' anxiety alleviation. Also, this research has made an important contribution in existing research as there were only a few studies addressing students' anxiety in information seeking chores.

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