

Research Anxiety among Undergraduate Pharmacy Students

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Abstract

Background: Research anxiety is the fear and uncertainty related to scientific research and production which can occur while conducting research and related activities.

Objective: To assess research anxiety among undergraduate pharmacy students.

Method: A descriptive cross-sectional study was conducted among the fourth year and recently passed out students of pharmacy colleges affiliated to Tribhuvan University throughout Nepal using non-probability purposive sampling technique. Response rate was 65.71%. A self-administered socio-demographic questionnaire and the standard tool with some modification were used for data collection.

Result: Among the respondents 62% agreed on getting emotional help from their friend, being able to learn research methodology and data analysis. About 60% of the respondents can read, collect extra information related to research, statistical tools for data analysis and labor hard for literature review. Majority of the respondents (65.2%) agreed on being interested to participate in research related courses. 66.3% of the respondents agreed on being able to gather information regarding research from different sources. More than half of the respondents (53.3%) had moderate level of research anxiety.

Conclusion: The level of research anxiety in undergraduate pharmacy students was moderate. Statistically significant negative correlation of research anxiety with academic effort, self-efficacy and students' attitude was found.

Keywords: Anxiety; Pharmacy; Undergraduate

Introduction

Anxiety is the state characterized by worried thoughts, feelings of tension with physical changes like increased blood pressure [1]. It is the prediction of future threat; it differs from fear which is emotional response to real or perceived approaching threat [2]. The fear and uncertainty related to scientific research and production which can occur during the

selection of subject to publishing and getting the feedback is known as research anxiety [3]. Occasional anxiety is common but frequent and intense anxiety affects daily activities [4]. Not only does research anxiety affect physical and mental health but also brings problem in scientific production, academic activities, work and socialization [3,5].

Various studies 6-10 have been done and it has been found that the prevalence of anxiety was higher in students of medical and health programs compared to the general public [6-8]. In a repeated measure study done in Arizona among pharmacy students, 30% of students were found to have clinically significant anxiety symptoms [9]. A Cross-Sectional Study was done in Saudi Arabia among pharmacy students in which anxiety was found to be 49% (with 25.9% having mild anxiety, 14.1% students having moderate anxiety, and 8.8% severe anxiety) [8]. A cross sectional study was done in Pokhara, Nepal among undergraduate pharmacy students where the prevalence of anxiety was found to be 46.9% [11]

Changing disease patterns and progress in science and technology has been changing the use of medicine [12]. Pharmacists' role has developed gradually and remarkably from dispensing to optimizing drug therapy, reviewing prescription and many more [13]. Pharmacy practice, education and research process are interrelated to each other. Also since research productivity has national as well as global impact; students in pharmacy schools are involved in scholarly research activities [14]. Thus, it is essential to measure the level of research anxiety in undergraduates. Furthermore, with the objective to determine research anxiety and its relation with different dependent variables i.e. academic support, academic effort, self-efficacy and students' attitude, this study was conducted.

Materials and Methods

Research design: Descriptive cross-sectional study.

Research setting: Different pharmacy colleges affiliated to Tribhuvan University.

Study unit: Bachelor in Pharmacy 4th year and recent pass-out batch.

Sampling method: Purposive sampling.

Sample size: 140. Response rate was 65.71%

The questionnaire was prepared and administered. Also the questionnaire was prepared in Google docs for online data collection. Questionnaire was sent to students in individual students' g-mail id or through the class representative when individual g-mail id was not available. Out of one hundred and forty, only ninety-two responses were obtained. Questions were marked "required" in all questions which were made compulsory to be filled by all the respondents to ensure respondents to ensure the completeness of the questionnaire. Anonymity was maintained using code number instead of the name of the respondents.

Self-administered questionnaire was used in Sunsari Technical College and JFIHS. Data collection was done from December 2020 to March 2021. Researcher herself collected data from the respondents. Serial number was used to maintain the anonymity of the questionnaire.

Criteria for sample selection

Inclusion Criteria: Students willing to participate in the study.

Instrumentation

The standard tool 14 with some modification was used for data collection.

Validity and Reliability

Reliability of the instrument was tested using Cronbach's alpha. Overall reliability score was 0.788.

Table 1: Among 92 respondents, 43 (46.7%) were males and 49 (53.3%) were females. 45 (48.9%) of the respondents stayed with their family.

Demographic details	Percentage in total participants	
Gender	Male	46.7
	Female	53.3
Stay	Alone	19.6
	With family	48.9
	With friends	31.5
Previous involvement in research	Yes	43.5
	No	56.5
Assisted research before	Yes	31.5
	No	68.5

The demographic details are listed in Table 1. More than half of the respondents (56.5%) were not previously involved in research. Majority of the respondents (68.5%) have not assisted research before.

Table 2: Academic support (n=92).

Statements	Strongly disagree f (%)	Disagree f (%)	Neutral f (%)	Agree f (%)	Strongly agree f (%)
My friends really try to help me in research.	2 (2.2)	2 (2.2)	19 (20.7)	52 (56.5)	17 (18.5)

Ethical approval and data collection

The ethical approval was granted from the Institutional Research Committee IRC of Manmohan memorial Institute of Health Sciences

Formal permission was obtained from the concerned authority of Universal College of Medical Sciences (UCMS), Janamaitri Foundation Institute of Health Sciences JFIHS, Sunsari Technical College, Maharajgunj Medical Campus, Maharajgunj and National Model College for Advanced Studies after briefing about the objectives, process and importance of the study. Written consent form was attached in the questionnaire and data collection was started only after taking consent.

Data analysis procedure

Descriptive and inferential statistics was used for data analysis. The data were checked for completeness, coded and entered into Statistical Package for Social Science (SPSS version 20). The obtained data was analyzed based on objectives of the study using descriptive statistics like frequency, mean, standard deviation, for inferential statistics correlation was calculated. The finding of the study is presented in different tables.

Results and Discussion

Result: Assessment of academic support, academic effort, self-efficacy, students' attitude and research anxiety

My lecturers really try to help me in research.	2 (2.2)	6 (6.5)	16 (17.4)	50 (54.3)	18 (19.6)
I get the emotional help/support from my friends.	1 (1.1)	5 (5.4)	14 (15.2)	57 (62)	15 (16.3)
I get the emotional help/support from my lecturers.	2 (2.2)	9 (9.8)	31 (33.7)	40 (43.5)	10 (10.9)
I get emotional help/support from my family members.	-	3 (3.3)	10 (10.9)	40 (43.5)	39 (42.4)
I can talk about my problems with my friends.	2 (2.2)	3 (3.3)	7 (7.6)	57 (62.0)	23 (25.0)
I can talk about my problems with my lecturers.	5 (5.4)	17 (18.5)	22 (23.9)	39 (42.4)	9 (9.8)
My friend is willing to help me make decisions.	2 (2.2)	4 (4.3)	20 (21.7)	54 (58.7)	12 (13.0)
My lecturer is willing to help me make decisions.	4 (4.3)	7 (7.6)	24 (26.1)	48 (52.2)	9 (9.8)
Mean ± S.D.: 3.7790 ± 0.56187					

Table 2 shows that majority of respondents agree (62%) on getting emotional help from their friend. Majority of respondents (62%) agree that they can talk about their problems

with their friends while 42.4% of the respondents agree on talking about their problems with their lecturers.

Table 3: Academic effort (n=92).

Statements	Strongly disagree f (%)	Disagree f (%)	Neutral f (%)	Agree f (%)	Strongly agree f (%)
Other than course assignments, I can also do extra exercises related to research and statistics.	1 (1.1)	13 (14.1)	18 (19.6)	48 (52.2)	12 (13.0)
In addition to lecture notes, I also read and collect extra information related to research and statistics.	-	6 (6.5)	14 (15.2)	56 (60.9)	16 (17.4)
I work hard to complete the research.	1 (1.1)	-	8 (8.7)	46 (50.0)	37 (40.2)
I study hard and prepare well for research methods and statistics	-	4 (4.3)	6 (6.5)	56 (60.9)	26 (28.3)
I read the research literatures more than	1 (1.1)	1 (1.1)	1 (1.1)	53 (57.6)	36 (39.1)

once to get full understanding of research					
I am very interested in attending research methods and statistics courses conducted.	2 (2.2)	2 (2.2)	14 (15.2)	47 (51.1)	27 (29.3)
I paid close attention to research methods and statistics courses.	-	1 (1.1)	18 (19.6)	51 (55.4)	22 (23.9)
Mean ± S.D.: 4.0435 ± 0.51605					

Table 3 reveals that Majority of the respondents (60.9%) agrees that they can read and collect extra information related to research and statistics in addition to lecture notes. Majority of the respondents (60.9%) study hard and prepare well for

research methods and statistics. More than half (57.6%) read the research literatures more than once to get full understanding of research.

Table 4: Self-efficacy (n=92).

Statements	Strongly disagree f (%)	Disagree f (%)	Neutral f (%)	Agree f (%)	Strongly agree f (%)
I am able to learn research methodology and data analysis.	1 (1.1)	3 (3.3)	14 (15.2)	57 (62.0)	17 (18.5)
I am interested to participate in research related courses	-	1 (1.1)	11 (12.0)	60 (65.2)	20 (21.7)
I am able to understand about research methodology and data analysis	-	5 (5.4)	23 (25.0)	52 (56.5)	12 (13.0)
I am good at statistics	5 (5.4)	13 (14.1)	38 (41.3)	33 (35.9)	3 (3.3)
My computer skill is adequate enough to operate computer programs.	-	10 (10.9)	32 (34.8)	39 (42.4)	11 (12.0)
I am good at solving mathematical problems	1 (1.1)	5 (5.4)	24 (26.1)	51 (55.4)	11 (12.0)
I am able to explain and tutor other students about research	3 (3.3)	7 (7.6)	35 (38.0)	40 (43.5)	7 (7.6)
I can do research methods and data analysis even if it is the hardest work	4 (4.3)	7 (7.6)	35 (38.0)	40 (43.5)	6 (6.5)

I can figure out difficult part in research.	2 (2.2)	9 (9.8)	36 (39.1)	41 (44.6)	4 (4.3)
I am able to gather information regarding research from different sources.	1 (1.1)	3 (3.3)	12 (13.0)	61 (66.3)	15 (16.3)
Mean ± S.D.: 3.6424 ± 0.49906					

Table 4 shows that that majority of the respondents (62%) agree on being able to learn research methodology and data analysis. Majority of the respondents (65.2%) agree on being interested to participate in research related courses. Majority of the respondents (66.3%) agree on being able to gather information regarding research from different sources while less than half of the respondents agree on being good at statistics. 42.4% of the respondents agree that their computer skill is adequate enough to operate computer programs.

Table 5: Students' Attitude (n=92).

Statements	Strongly is agreed f (%)	Disagree f (%)	Neutral f (%)	Agree f (%)	Strongly agree f (%)
I like research.	-	3 (3.3)	14 (15.2)	55 (59.8)	20 (21.7)
I enjoy doing research.	1 (1.1)	1 (1.1)	19 (20.7)	57 (62)	14 (15.2)
I am confident when I have to deal with research.	-	4 (4.3)	28 (30.4)	51 (55.4)	9 (9.8)
I am under stress while doing research	2 (2.2)	8 (8.7)	25 (27.2)	38 (41.3)	19 (20.7)
I can learn from research.	-	2 (2.2)	1 (1.1)	56 (60.9)	33 (35.9)
I find it difficult to understand research concepts.	1 (1.1)	26 (28.3)	25 (27.2)	36 (39.1)	4 (4.3)
I find it difficult to understand research methods.	-	27 (29.3)	27 (29.3)	35 (38)	3 (3.3)
I find statistics formulas are easy to understand.	1 (1.1)	23 (25)	44 (47.8)	19 (20.7)	5 (5.4)
Research is a required part of my professional career.	-	3(3.3)	4 (4.3)	48 (52.2)	37 (40.2)
Research skills make me more employable.	1 (1.1)	4 (4.3)	9 (9.8)	53 (57.6)	25 (27.2)
Mean ± S.D.: 3.5239± 0.42358					

research. Majority of the respondents enjoy doing research (62%) and agree that they can learn from research (60.9%). 20.7% of the respondents agree on finding statistics formula easy to understand.

Table 6: Research Anxiety (n=92).

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The closer I am to research work; the harder it is for me to concentrate on that.	3 (3.3)	25 (27.2)	22 (23.9)	31 (33.7)	11 (12.0)
When I perform research, I worry that I will not remember the research protocol.	2 (2.2)	32 (34.8)	22 (23.9)	32 (34.8)	4 (4.3)
When I conduct research I fear it is poor compared to others.	6 (6.5)	28 (30.4)	20 (21.7)	30 (32.6)	8 (8.7)
I worry that my friends may judge my research bad.	8 (8.7)	34 (37.0)	24 (26.1)	22 (23.9)	4 (4.3)
I worry I may not be able to complete my research on time.	7 (7.4)	15 (16.3)	18(19.6)	46 (50.0)	6 (6.5)
I worry I may not be able to complete graduation on time due to research.	13 (14.1)	37 (40.2)	15 (16.3)	23 (25.0)	4 (4.3)
I feel doing literature review difficult and time-consuming.	6 (6.5)	22 (23.9)	15 (16.3)	45 (48.9)	4 (4.3)
During data analysis, I think that I am doing awful or that I may fail.	2 (2.2)	34 (37.0)	28 (30.4)	26 (28.3)	2 (2.2)
I lose focus on research and cannot remember important aspects.	3 (3.3)	31 (33.7)	32 (34.8)	25 (27.2)	1 (1.1)
Usually I remember what to do after the experiment is already over.	7 (7.6)	11 (12.0)	28 (30.4)	46 (50.0)	-
I worry so much before my performance that I am too worn out to do my best.	4 (4.3)	18 (19.6)	34 (37.0)	32 (34.8)	4 (4.3)
I feel out of sorts or not really I when I take any research related tasks.	3 (3.3)	29 (31.5)	38 (41.3)	20 (21.7)	2 (2.2)
I find that my mind sometimes wanders when I am taking an important research task	-	20 (21.7)	27 (29.3)	42 (45.7)	3 (3.3)
After completing a research project, I	2 (2.2)	16 (17.4)	13 (14.1)	53 (57.6)	8 (8.7)

worry about whether I did well enough					
I struggle with writing research reports, or avoid them as long as I can.	3 (3.3)	19 (20.7)	28 (30.4)	37 (40.2)	5 (5.4)
It bothers me that my research may not be acceptable for publishing in research journals	3 (3.3)	21 (22.8)	20 (21.7)	35 (38.0)	13 (14.1)
Mean ± S.D.: 3.1135 ± 0.58277					

Table 6 shows that half of the respondents agree that they worry they may not be able to complete my research on time. 48.9% of the respondents agree that they feel doing literature review difficult and time-consuming. Half of the respondents (50%) agree that they remember what to do after the experiment is already over. More than half of the respondents (57.6%) agree that they worry about whether they did well enough after completing a research project.

efficacy, students' attitude and research anxiety. Average mean score for academic support was found to be 3.78, while average mean score for academic effort was 4.04, self-efficacy was 3.64, Students' attitude was 3.52 and research anxiety was 3.11.

The finding was similar to the study conducted by in which average mean score of academic support, academic effort, self-efficacy, students' attitude and research anxiety was 3.93, 3.64, 3.47, 3.37 and 3.22 respectively [14].

Discussion

Assessment of academic support, academic effort, self-

Table 7: Level of anxiety.

Anxiety level	Frequency	Percentage
Mild	41	44.6
Moderate	48	52.2
Severe	3	3.3

Scoring: Anxiety percentage less than 50% is considered as mild anxiety, anxiety percentage between 50% and 75% as moderate anxiety and anxiety percentage more than 75% as severe anxiety. Scoring was done using mid value approach [15].

Table 7 shows that more than half of the respondents (53.3%) had moderate level of research anxiety whereas (43.5%) had mild level of research anxiety with (33%) severe level of research anxiety.

Discussion: Findings showed that students have moderate level

Table 8: Correlation.

Variables	Pearson correlation	Significance
Academic support	-0.135	0.201
Academic effort	-0.236	0.023
Self-efficacy	-0.344	0.001
Students' attitude	-0.484	0

Table 8 shows that research anxiety has weak negative correlation with academic support which is not statistically

of research anxiety. This result is supported by the study conducted by among human resource education faculty members and the study conducted by among graduate ELT Students [16,17].

However it was in contrast to the study conducted by among postgraduate students which was above average or even high and the study conducted by among Faculty Members of Isfahan University of Medical Sciences which was higher than moderate [3,18].

significant ($p=0.201$). There is statistically significant weak negative correlation between research anxiety and academic

effort ($p=0.023$). Statistically significant moderate negative correlation exist between research anxiety and self-efficacy ($p=0.001$). There is moderate negative correlation between research anxiety and students' attitude which is statistically significant ($p<0.001$).

Discussion: The study revealed that research anxiety has no correlation with academic support which is in contrast to the study conducted by in Malaysia where significant strong negative correlation was found [14]. The reason for it is not known. It may be due to the difference in sample size and research setting.

The study showed that there is statistically significant weak negative correlation between research anxiety and academic effort similar to the study conducted which showed significant moderate negative correlation [14].

In this study, statistically significant moderate negative correlation between research anxiety and self-efficacy was found. The finding is supported by the study conducted by [17,19]. This is in contrast to the study conducted in which significant strong negative correlation was found [14].

There is statistically significant moderate negative correlation between research anxiety and students' attitude which is in different from the study conducted [14]. The reason may be due to different scenario of Malaysia where focus of students is thought to be more towards pharmacy practice than research.

Conclusion

Average mean score for research anxiety was found to be 3.11. The level of research anxiety in the undergraduate students studying Bachelor in Pharmacy in Tribhuvan University was determined and found to be moderate. The study shows that there is statistically significant negative correlation of research anxiety with academic effort, self-efficacy and students' attitude.

Recommendation

Coaching classes to the students can be conducted to help them on designing the research project, statistical analysis and operating computer programs.

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References

1. <https://www.apa.org/topics/anxiety>
2. Edit F (2013) Diagnostic and statistical manual of mental disorders. Am Psychiatric Assoc 21:591-643
3. Ashrafirizi H, Zarmehr F, Bahrami S, GhazaviKhorasgani Z, Kazempour Z, et al. (2014) Study on Research Anxiety Among Faculty Members of Isfahan University of Medical Sciences. Mat Soci Medic 26:356
4. <https://www.mayoclinic.org/diseases-conditions/anxiety/symptoms-causes/syc-20350961>
5. <https://www.medicalnewstoday.com/articles/322510#symptoms>
6. Dyrbye LN, Thomas MR and TDS (2021) Systematic Review of Depression, Anxiety, and Other Indicators of Psychological Distress among U.S. and Canadian Medical Students. Acad Med 81:354-373
7. January J, Madhombiro M, Chipamaunga S, Ray S, Chingono A, et al. (2018) Prevalence of depression and anxiety among undergraduate university students in low and middle-income countries: A systematic review protocol. Syst Rev 7:1-5
8. Samreen S, Siddiqui NA, Mothana RA (2020) Prevalence of anxiety and associated factors among pharmacy students in Saudi Arabia: A cross-sectional study. Biomed Res Int 2020:2436538-2436539
9. Shangraw AM, Silvers J, Warholak T, Vadie N (2021) Prevalence of anxiety and depressive symptoms among pharmacy students. Am J Pharm Educ 85:102-106
10. Teh CK, Ngo CW, Zulkifli RA, Vellasamy R, Suresh K (2015) Depression, Anxiety and Stress among Undergraduate Students: A Cross Sectional Study. Open J Epidemiol 05:260-268
11. Paudel S, Gautam H, Adhikari C, Yadav DK (2020) Depression, Anxiety and Stress among the Undergraduate Students of Pokhara Metropolitan, Nepal. J Nepal Health Res Counc 18:27-34
12. Babar Z (2015) Pharmacy Practice Research Methods. Adis, Cham, Switzerland.
13. Mansur JM (2016) Medication Safety Systems and the Important Role of Pharmacists. Dru and Agin 33:213-221
14. Maharajan MK, Rajiah K, Tam AM, Chaw SL, Ang MJ, et al. (2017) Pharmacy students' anxiety towards research during their undergraduate degree; How to reduce it? PLoS One 12:1-13
15. Kothari CR (2004) Research Methodology: Methods and Techniques. 2nd revised edition.: New Age International Publishers, New Dehli.
16. Higgins CC, Kotrlík JW (2006) Factors Associated with Research Anxiety of University Human Resource Education Faculty. Career Tech Educ Res 31:175-199
17. Merç A (2016) Research anxiety among Turkish graduate ELT students. Curr Issues Educ 19:1-2
18. Altioğ S, Yukseltürk E, Uçgul M (2018) The investigation of postgraduate students' scientific research competencies and anxieties towards research in terms of various variables. J High Educ Sci 8:348-367
19. Razavi S, Shahrabi A, Siamian H (2017) The Relationship between Research Anxiety and Self-Efficacy. Mater Socio Medica 29:247-247