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PERCEIVED BARRIERS TO TIMELY COMPLETION OF POST-GRADUATE RESEARCH PROJECTS IN PUBLIC HEALTH: A CROSS SECTIONAL STUDY IN DISTRICT, PESHAWAR.

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ABSTRACT

Introduction: Barrier to timely completion of post graduate degree remain a crucial issue for students especially for MPH students. There are multiple factors ranging from personal capacity to that of organizational capacity which impeding the process. This study intends to determine the Perceived barriers to timely completion of post-graduate research projects in Public Health

Methodology This was institutional based survey (cross-sectional) type of study conducted in two selected universities in Peshawar. All MPH students (n=260) who have not completed their thesis till end of 4th semester but still have been given additional one semester time for the completion in both the universities. Data collected via questionnaire and analyzed with SPSS V-27.0.

Results: Result was based on 71 participants (MPH student age 30.65 ± 0.591 (ranged from 24 43 years). Among them 54(76.1%) male and 17 (23.9%) female. Regarding the timely completion of the degree none of them have completed the research work within two years. As shown in the table 1(1.4%) of students was enrolled since 2018 and while a remarkable proportion 66 (93.0%) of students were from 2019 batch and still struggling to complete their research work. According to the schedule, they should be graduated in 2020 but still they were not successful to have their degree. Similarly, 04(5.6%) of the scholars participated in this study were enrolled in 2020 which were supposed to be graduated in 2021. Lack of competent supervisor is one of the major issues with MPH scholar's 45 percent of the study participants reported that there is lack of competent supervisor. 69% of the scholars reported that the main causative factor in non-completion of research is institutional factors while 17% have personal barriers in their research. Infrequent meeting of BOSAR/ASRB is also one of the issues that research scholars face. 73 percent participant agree with that. Table 2 presents the results summary; 63 percent of the scholars lack technical writing skills.

Conclusion: Students' research projects may be delayed due to ineffective communication between supervisors and students, lack of feedback or instruction, or unreachability of supervisors. Students' research projects may be delayed due to ineffective communication between supervisors and students, lack of feedback or instruction, or unreachability of supervisors.

Key words: Barrier, Post Graduate Degree, MPH Students.

Introduction

Postgraduate education makes develop a scientific, ethical behavior among students which is to be practice in the future. Therefore, research training is considered as prime importance and have

been incorporated in the curriculum of both undergraduate and postgraduate medical and allied health discipline. To develop the base for research work the students of postgraduate studies needed to complete their research projects to get their degree [1-2]. Despite considerable top-down pressure on postgraduate students to undertake research, the available evidence suggests that relatively few projects studies are timely completed and get published [3]. It is obvious that all inventions have been conceivable with the help of research which in turns increases understanding of the phenomenon under study. Hence students need technical assistance and trainings in area of research methods [4]. As compared to developed countries students from medical discipline in low-resource countries some time do not have the obligation to conduct research project. The low level attitude in this regard is associated quality of training and availability of technical assistance for the students [5]. Keeping the future direction, graduate and post graduate level of medical education is considered to be the benchmark. This in turn will drive to make doctorate in nursing and also will lead to change the mindset of undergraduate and post graduate medical and allied health students towards research [6-7]. Therefore, the selection of teaching methods and the development of contents to promote student engagement in research can make a difference especially making the attitudes toward research. Creating research culture among students of medical and allied health it is vital to provide all possible resources to them, [7-8] however in most of universities the students are unable to timely complete their thesis and get it published. Furthermore, there are different factors/barriers which influence the students' attitude and performance towards research. There are 'anticipatory anxiety taking a research course' availability of resources and technical assistance [9]. Many studies have examined student's attitudes toward research, factors influencing research activities and its utilization. Among the obstacles faced by the students are the time factors, unavailability or unable to access

to the relevant references' materials, poor skill of the research, lack of training, lack of guidance by the faculty, poor coordination among student and supervisor [10-11]. Furthermore lack of facilitators to research proposal development, availability of time from supervisor side to review and give feedback to research work conducted by the new researchers. The researchers also found unavailability of relevant research and support from colleagues as facilitators [12-13]. Apart from lack of mentorship, organizational related factors also play a significant role. It includes the organizational environment (research culture uncooperative staff, research are not commercialized neither students are motivated), lack of facilities like; lack of internet and computer, photocopy, library and laboratory facilities [14]. Apart from these barriers some personnel level factors also do matter in this regards [15-16]. These includes interest of student, high work burden, part time jobs, lack of time, poor educational back ground and lack of knowledge of research, inadequate training in research methods[17-20]. The aim of the current research work was to identify the barriers impending the timely completion of research among postgraduate students of MPH in district Peshawar.

Materials and Methods

Study Design

This was institutional based survey (cross-sectional) type of study

Study Settings

This was conducted in two selected universities in Peshawar; public and private where MPH is offered. The study was carried out in one public sector university (Khyber Medical University) and one private sector university (Sarhad University of science and technology) in Peshawar.

Study Population and Inclusion Criteria

All MPH students who have not complete their thesis till end of 4th semester but still have given additional one semester time for the completion in both the universities. There were 270 total MPH scholars considered as study population.

Sampling Technique and Sample size

The total number of scholars were 260 among which 71 scholars were sampled. The sample size was calculated by the following formula.

$$n = \frac{z_{1-\alpha/2}^2 P(1-P)N}{d^2 (N-1) + z_{1-\alpha/2}^2 P(1-P)}$$

Where considering $p=0.50$ and $d= 0.10$, $CI=95\%$.

After approval from BOSAR, Convenient Sampling Technique was used to select respondents and they were interviewed after the consent that this information and data will be used only for research purpose.

Study Duration

The study, data collection and analysis were carried out in almost seven months after approval of BOSAR.

Samples Selection

Inclusion Criteria

Students who have completed their course work and awaited for thesis submission.

Exclusion Criteria:

- Under disciplinary action
- Absent during data collection
- Refuses to be included

Data Collection Protocol

The following steps will be followed for collecting information

- Approval from university
- Consents from participants
- Distribution of question (assisting them in filling and completion)
- Confidentiality of the participants by assigning codes which is only be known to the principal investigator.

Data Analysis

After the data collection analysis was done according to the types of data SPSS V-20.0. Data were plotted in the form of graphs, charts, and percentages according to the types of variable/data. For making inferences chi square was applied

Ethical Considerations and Approval

The topic was approved form BOSAR and ethical review board of Sarhad University of Science and Technology. Data was collected form the included participant only after their consents. The aims and objectives of data collection were clearly explained to participants before collecting the data.

Results

Result was based on 71 participants (MPH students) from selected universities having a mean age 30.65 ± 0.591 (ranged from 24 43 years). Among them 54(76.1%) male and 17 (23.9%) female.

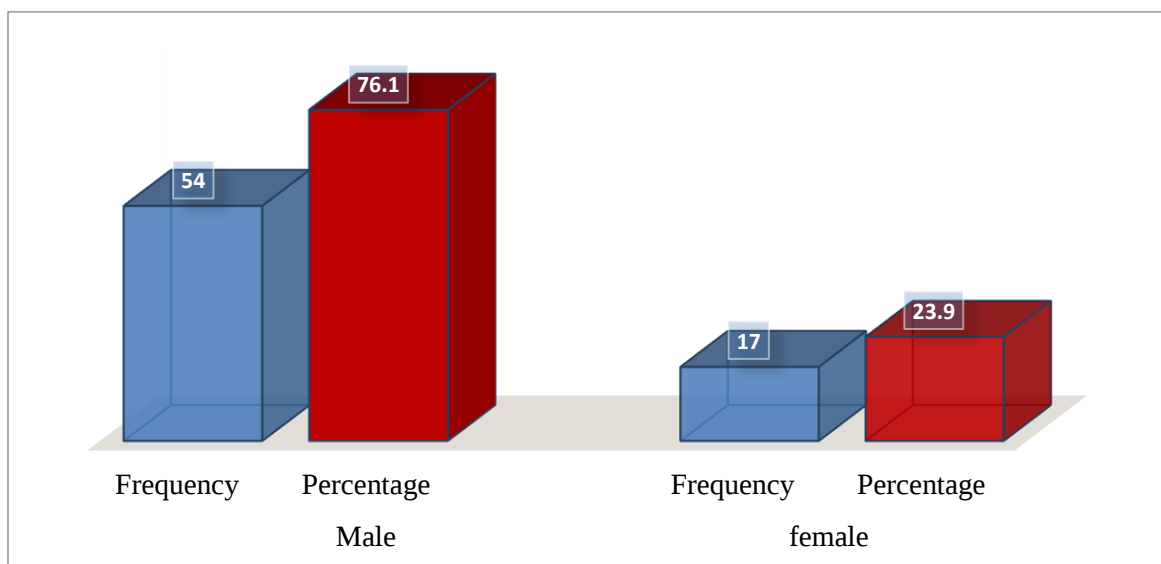
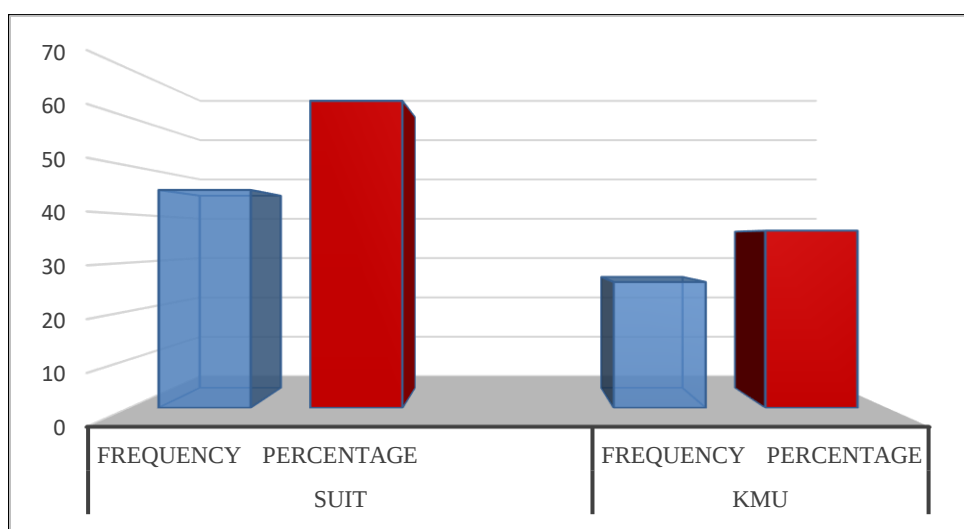


Figure 1. Gender wise Distribution

The figure below presents the proportion of students from two universities, majority 45(63.4%) were from Sarhad University and rest 26(36.6%) were from KMU.

**Figure 2. Distribution by University**

Among the students 54.0% were married while the rest of 45.0% were unmarried. Among the married scholars there were 8 (11.3%) who have one child and there were 12 (16.9%) scholars who have two children. While 06(8.4%) scholars have 3-4 children respectively.

Regarding the timely completion of the degree none of them have completed the research work within two years. As shown in the table 1(1.4%) of students was enrolled since 2018 and while a remarkable proportion 66 (93.0%) of students were from 2019 batch and still struggling to complete their research work. According to the schedule, they should be graduated in 2020 but

still they were not successful to have their degree. Similarly, 04(5.6%) of the scholars participated in this study were enrolled in 2020 which were supposed to be graduated in 2021.

Table 1. Personal Information of the participant

		Freq.	%	Valid %	Cum. %
Marital Status					
	Married	39	54.9	54.9	54.9
	Unmarried	32	45.1	45.1	100.0
Number of Children					
	No child	45	63.4	63.4	63.4
	1 child	8	11.3	11.3	74.6
	2 Children	12	16.9	16.9	91.5
	3-4 Children	6	08.4	4.2	
Year since enrolled in MPH					
	2018	01	1.4	1.4	1.4
	2019	66	93.0	93.0	94.4
	2020	04	5.6	5.6	

Lack of competent supervisor is one of the major issues with MPH scholar's 45 percent of the study participants reported that there is lack of competent supervisor. 69% of the scholars reported that the main causative factor in non-completion of research is institutional factors while 17% have personal barriers in their research. Infrequent meeting of BOSAR/ASRB is also one of the issues that research scholars face. 73 percent participant agree with that. Table 2 presents the results summary; 63 percent of the scholars lack technical writing skills.

Table 2. Self-reported training status of the students

		Freq.	%	V. percent	C. percent
Got enough research training at postgraduate level					
	Yes	37	52.11	52.11	52.11
	NO	34	47.89	47.89	
Have you been involved in mini research project during student life					
	Yes	52	73.24	73.24	73.24
	NO	19	26.76	26.76	
Research allotted time					
	Yes	48	67.61	67.61	67.61
	NO	23	32.39	32.39	

Table 3. Factors associated with poor performance of the students

		Freq.	%	Valid %	Cum. %
Lake of skills for conducting independent research					
	Yes	47	66.2	66.2	66.2
	NO	24	33.8	33.8	
Poor training by the university/faculty during course work					
	Yes	44	62.0	62.0	62.0
	NO	27	38.0	38.0	
Poor in statistics					
	Yes	53	74.6	74.6	74.6
	NO	18	25.4	25.4	
Lack of support from statistician					
	Yes	43	60.6	60.6	60.6
	NO	28	39.4	39.4	
Lake of support from supervisor					
	Yes	30	42.3	42.3	42.3
	NO	41	57.7	57.7	100.0

Table 4. Factors associated with processing of the research project and management of University

		Freq.	%	V. percent	C. percent
Complicated process of submission of the project					
	Yes	55	77.5	77.5	77.5
	NO	16	22.5	22.5	100.0
Management of university					
	Yes	49	69.0	69.0	69.0
	NO	22	31.0	31.0	100.0
Lack of competent/supportive supervisor					
	Yes	32	45.1	45.1	45.1
	NO	39	54.9	54.9	100.0
Infrequent meeting of ASRB/BoSAR					
	Yes	52	73.2	73.2	73.2
	NO	19	26.8	26.8	100.0

Table 5. Personal Factors associated with timely incompleteness of research

		Freq.	%	V. percent	C. percent
Unable to clear plagiarism					
	Yes	33	46.5	46.5	46.5
	NO	38	53.5	53.5	
Unable to get permission for data collection at study setting					
	Yes	38	53.5	53.5	53.5
	NO	33	46.5	46.5	
Lake of Technical and logistic support like computer and internet					
	Yes	32	45.1	45.1	45.1
	NO	39	54.9	54.9	
Lake of Self-interest and motivation					
	Yes	25	35.2	35.2	35.2
	NO	46	64.8	64.8	
Difficulty in finding time at work place					
	Yes	50	70.4	70.4	70.4
	NO	21	29.6	29.6	
Incompetent in research					
	Yes	34	47.9	47.9	47.9
	NO	37	52.1	52.1	
Faced ethical problem					
	Yes	39	54.9	54.9	54.9
	NO	32	45.1	45.1	
Poor technical writing skills					
	Yes	45	63.4	63.4	63.4
	NO	26	36.6	36.6	
Language Barriers					
	Yes	7	9.9	9.9	9.9
	NO	64	90.1	90.1	

4.1. Final perceived impression of the scholars about main contributing factors

The final impression of the students indicate that Institutional Factors is the common cause of the delay in their research project. Result indicate that 49 (69.02%) of the students were of the view that due to lack of smooth processing protocol in the university they fail to timely complete their research project. Among these factors, approval from BAOSAR/ASRB, getting certificate from QEC, semester fee plenty and approval from supervisor and delay in the review process etc, were the core variables associated with organization factors. On other hand only 17(23.9%) and

5(7.05%) said that the delay was due to personal problem of inability to get ethical approval respectively.

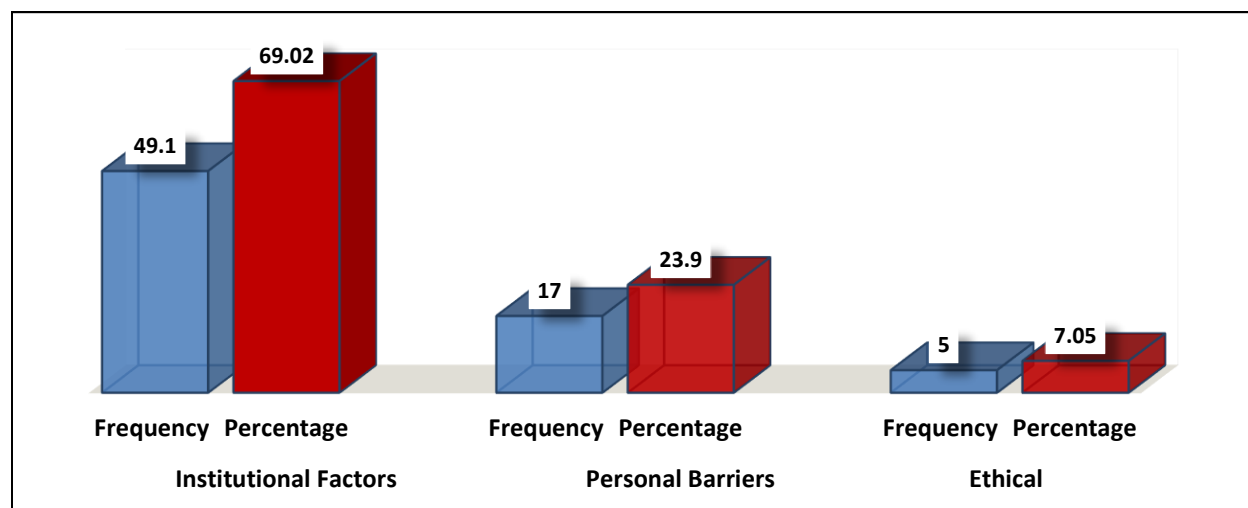


Figure 3. Perceived impression of the scholars about main contributing factors

4.2. Comparison of the factors between two selected universities

4.2.1. Factors related to technical skills of students and supporting staff

The quality of teaching training was discouraged by 60.0% of student from SUIIT and 26.9% of KMU and the difference was significant ($p=0.007$), majority of the Students 71.1% and 76.9% from both of the university were lacking previous experience in research ($p=0.594$). Majority of the students appreciated time allocation, however, 80.0% of Sarhad and 42.3% of KMU students reported that they have lack of skills for conducting independent research ($p=0.001$). Similarly, Poor training by the university/faculty during course work was reported by 71.1% of Sarhad University's students as compared to 46.2% KMU. Similarly 80.0% VS 65.4% of students were Poor in statistics while 68.9%- 46.2% also said that there was Lack of support from statistician ($p=0.059$) and 44.4% VS 38.5% expressed that there was lake of support from supervisor ($p=0.623$)

Table 6. Factors related to technical skills of students and supporting staff

University name	Option	P-Value
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			Yes	NO	
Got enough research training at postgraduate level					
	Sarhad	N	18	27	0.007
			40.0%	60.0%	
	KMU	N	19	7	
			73.1%	26.9%	
Previous experience in research					
	Sarhad	N	32	13	.594
			71.1%	28.9%	
	KMU	N	20	6	
			76.9%	23.1%	
Allocated time					
	Sarhad	N	29	16	.454
			64.4%	35.6%	
	KMU	N	19	7	
			73.1%	26.9%	
Lack of skills for conducting independent research					
	Sarhad	N	36	9	0.001
			80.0%	20.0%	
	KMU	N	11	15	
			42.3%	57.7%	
Poor training by the university/faculty during course work					
	Sarhad	N	32	13	0.097
			71.1%	28.9%	
	KMU	N	12	14	
			46.2%	53.8%	
Poor in statistics					
	Sarhad	N	36	9	0.17
			80.0%	20.0%	
	KMU	N	17	9	
			65.4%	34.6%	
Lack of support from statistician					
	Sarhad	N	31	14	0.059
			68.9%	31.1%	
	KMU	N	12	14	
			46.2%	53.8%	

Lake of support from supervisor					
	Sarhad	N	20	25	
			44.4%	55.6%	0.623
	KMU	N	10	16	
			38.5%	61.5%	

4.3. Factors related to processing protocol of research

Result further indicate 80.0% of SUIIT VS 73.1% of KMU students expressed that the delay was due to complicated process of submission of the project. Management of university was blamed by 77.8% VS 53.8% of the students ($p=0.03$). Lack of competent/supportive supervisor was tagged by 44.4% VS 46.2% students ($p= 0.889$)

University Name			Option		P-Value
			Yes	NO	
Complicated process of submission of the project					
	Sarhad	N	36	9	0.501
			80.0%	20.0%	
	KMU	N	19	7	
			73.1%	26.9%	
Management of university					
	Sarhad	N	35	10	0.03
			77.8%	22.2%	
	KMU	N	14	12	
			53.8%	46.2%	
Lack of competent/supportive supervisor					
	Sarhad	N	20	25	.889
			44.4%	55.6%	
	KMU	N	12	14	
			46.2%	53.8%	

4.4. Factors associated to Institute

Majority 77.8% of students from SUIIT has reported that the delay was due to Infrequent meeting of ASRB/BoSAR and the same was reported by 65.4% of scholar from KMU (p=.256). Plagiarism as barrier was faced by 48.9% and 42.3% students, respectively, while Un ability to get permission for data collection at study setting and Lack of Technical and logistic support like computer and internet was reported by 53.3% and 48.9% of SUIIT and 46.7% and 51.1% students of KMU.

Table 7. Factors associated to Institute

University Name			Option		P-Value
			Yes	No	
Infrequent meeting of ASRB/BoSAR					
	Sarhad	N	35	10	.256
			77.8%	22.2%	
	KMU	N	17	9	
			65.4%	34.6%	
Unable to clear plagiarism					
	Sarhad	N	22	23	.592
			48.9%	51.1%	
	KMU	N	11	15	
			42.3%	57.7%	
Unable to get permission for data collection at study setting					
	Sarhad	N	24	21	.967
			53.3%	46.7%	
	KMU	N	14	12	
			53.8%	46.2%	
Lake of Technical and logistic support like computer and internet					
	Sarhad	N	22	23	.395
			48.9%	51.1%	
	KMU	N	10	16	
			38.5%	61.5%	

4.5. Barriers related to personal capacity

Self-interest was not barrier among most of students; however, difficulty in finding time at work place was common among students of both universities. Similarly, Incompetent in research was reported by 53.3% and 38.5% students while ethical problem was faced by 57.8% VS 50.0% of the students. On other hand 71.1% of MPH scholar from SUIT admitted that they have poor technical writing skills as compared to 50.0% students of KMJU ($p=0.07$), language barriers was not big issue for most of the students.

Table 8. Factors associated to Institute

University Name			Options		P-Value
			Yes	NO	
Lake of Self-interest and motivation					
	Sarhad	N	16	29	0.936
			35.6%	64.4%	
	KMU	N	9	17	
			34.6%	65.4%	
Difficulty in finding time at work place					
	Sarhad	N	34	11	.212
			75.6%	24.4%	
	KMU	N	16	10	
			61.5%	38.5%	
Incompetent in research					
	Sarhad	N	24	21	.227
			53.3%	46.7%	
	KMU	N	10	16	
			38.5%	61.5%	
Faced ethical problem					
	Sarhad	N	26	19	.526
			57.8%	42.2%	
	KMU	N	13	13	
			50.0%	50.0%	
Poor technical writing skills					
	Sarhad	N	32	13	.075
			71.1%	28.9%	
	KMU	N	13	13	
			50.0%	50.0%	

Language Barriers					
	Sarhad	N	4	41	
			8.9%	91.1%	.718
	KMU	N	3	23	
			11.5%	88.5%	

4.6. Comparing the final impression of student about most common causative factor
 Comparison between male and female, 38 (70.4%) of male accounted Institutional Factors as barrier as compared to 11 (64.7%). Personal Barriers was high 6 (35.3%) in female as compared to male 11 (20.4%) however these differences were not statistically significant ($p=0.2$). On other hand result compared between students of two university indicate that 33 (73.3%) VS 16 (61.5%) of students from Sarhad and KMU linked the delay to Institutional Factors, few of them 10 (22.2%) and 7 (26.9%) made association with personal factors ($p=0.4$). Among married and unmarried students personal factors was high 13 (33.3%) among married as compared to 4 (12.5%) of unmarried ($p=0.04$).

Table 9. Comparing the impression of students

		Which of the following factors you think is highly causative factor			P-Value
		Institutional Factors	Personal Barriers	Ethical	
Gender	Male	38 (70.4%)	11 (20.4%)	5 (9.3%)	0.2
	Female	11 (64.7%)	6 (35.3%)	0 (0.0%)	
University	Sarhad	33 (73.3%)	10 (22.2%)	2 (4.4%)	0.4
	KMU	16 (61.5%)	7 (26.9%)	3 (11.5%)	
Marital Status	Married	22 (56.4%)	13 (33.3%)	4 (10.3%)	0.04
	Unmarried	27 (84.4%)	4 (12.5%)	1 (3.1%)	

Discussion

The Postgraduate programs are structured in such a way that the students are supposed to complete their research work for the awards of degree, however there are various obstacles that may keep students from actively participating in research activities and which in turn lead to delay in timely completion of the degree. This create a disappointment among the students and also negative impression on the reputation of the supervisors and university. Here are several potential impediments to postgraduate research in Pakistan. It includes the lack of access to resources especially the scientific databases, archives, and lack of opportunities for funding. They may find it challenging to carry out effective research and distribute their findings as a result. One of the most reliable measures of a country's scientific development in the modern world is the state of research in its scientific community. As a result, conducting precise and scientific research has gained importance in most growing and developed countries. This tendency could be the outcome of an effort to resolve the disparities in access to healthcare in local areas, create a distinct identity from other countries, or engage in competition with them. Research is a method used in research to develop new discoveries, discoveries in science, or innovations. Health research has an influence on all aspects of illness prevention, diagnosis, and treatment, as well as the laws governing health care systems. The absence of organizational support for research among students may contribute to scientific knowledge deficits at national and international level. The absence of basic and significant research may be a reflection of other factors that affect the research. The main factors that are believed to have an effect on research success are attitudes towards knowledge and obstacles to research. There was lack of information on the obstacles faced by the PG students, MPH in the present case. Thus, this study was conducted in two selected universities; the public and private sectors to see the experience of

the students about the factors influencing the delay in the timely completion of research work. The result indicates that out of 71 students 76.1% male and 23.9% female. And 63.4% from private university and 36.6% were from public sector respective. Furthermore, 54.0% of them were married. Regarding timely degree completion, none of them had their research projects finished in the allotted two years. According to the data, 1 (1.4%) of the students were enrolled as of 2018, and an impressive proportion of 66 (93.0%) of the students were from the 2019 cohort and are currently having trouble finishing their research projects. Although they were supposed to graduate in 2021, they were still unable to obtain their degree. Similar to that, 4 (5.6%) of the students who took part in this study entered in 2020 but were scheduled to graduate in 2022. One of the main problems with MPH scholars is a lack of an effective supervisor. A lack of qualified supervisor was identified by 45% of survey participants. According to 69% of the academics, institutional reasons are the major reason why research projects don't get finished, while 17% of researchers face personal obstacles. Another problem facing research researchers is the infrequent BOSAR/ASRB meetings. A same study was performed in Sydney University where medical students were being the core participants. The result indicates that 75% of the student reported that they needed both general skills as well as research-based abilities to properly finish the assignment. According to the supervisor, 71% of the students need special training in the research apart from their routine training. There have been lack of spared time for research activities and that was the main obstacle to effective research initiatives among 61% of the students [21]. the result further indicate that 75% have completed their research and had improved abilities, but still were thanking to re-evaluate the schedule time for the completion of this milestones. Among students, 75% needed more assistance from their supervisors especially in the areas of statistics while 51% heeded help in scientific writing [21]. The financial problems

were reported by 52% student in Sydney University. Experience with prior research supervision had an impact on the replies. Highly experienced supervisors reported higher rates of access to expert assistance in scientific writing, creating ethics applications, and research methodology compared to less experienced supervisors. Highly experienced supervisors were also significantly more likely to want students to be given dedicated time for the project ($P=0.01$) than less experienced supervisors. Overall perception of MPH student in the present study indicate that institutional factors are typically to blame for the delay in their research endeavor. The results show that 69.02% of the students believed that their failure to timely complete their research project was caused by the university's lack of efficient processing procedures. The main variables linked to organization factors among these included approval from BAOSAR/ASRB, receiving a certificate from QEC, having enough money for the semester's fees, approval from the supervisor, and delays in the review process. Only 23.9% and 7.05%), on the other hand, said that the delay was caused by a personal issue or by an inability to get ethical permission, respectively. The same were supported by other researches where they also reported that lack of facilitation impediments to completing PG level research work successfully. Secondly, lack of sources of funding for their project management acts as source of delay [22-26]. The main obstacles were program-level, and the most commonly mentioned ones were conflicting academic demands on students of the whole Postgraduate Program and a lack of devoted time for the project. There were unexpected issues at the project level which include; delays in data collection and the length of time it took for technical and ethical approval from the committees of the university [27]. The personal commitments work burden in jobs were others obstacles supervisor's side. A key hurdle connected to students was found to be a lack of prior research experience or a lack of dedication to the endeavor [28]. There are several factors related to

supervisors that can lead to delays in students' research projects. Here are some potential factors e.g poor communication between supervisors and students can lead to delays.

Conclusion

There are several factors related to supervisors that can lead to delays in students' research projects. Here are some potential factors e.g poor communication between supervisors and students can lead to delays. Students may not receive timely feedback or guidance, resulting in a lack of direction and progress. Supervisors who are unavailable or difficult to reach can cause delays in research projects. Students may have questions or need feedback, but if their supervisor is not available, they may have to wait for a response, delaying their work.

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