



REASONS FOR LACK OF RESEARCH IN DENTISTRY; A CROSS SECTIONAL SURVEY ON DENTISTS AND STUDENTS IN TEACHING HOSPITALS OF PAKISTAN

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Abstract

Introduction: Research in dentistry is essential for improving clinical practices and advancing oral healthcare. However, research participation among dental students and practitioners in Pakistan remains limited due to various barriers. This study explores the reasons behind the lack of research engagement in teaching hospitals.

Objectives: To establish the determinative factors discouraging participation in research among dental students, house officers and faculty members in teaching hospitals in Pakistan.

Materials and Methods: A cross-sectional survey was conducted at Dentistry Department, Ayub Medical College Abbottabad, Pakistan from January 2024 to June 2024. A structured questionnaire was distributed among 250 participants, including dental students, house officers, and faculty members. Data were analyzed using SPSS, applying descriptive and inferential statistics.

Results: Major barriers identified were lack of mentorship (45%), time constraints (40%), and limited funding (30%). Despite these challenges, 80% of participants expressed interest in research if proper support was provided.

Conclusion: Addressing mentorship, funding, and institutional support can enhance research participation among Pakistani dental professionals.

Keywords: *Dental research, barriers, mentorship, institutional support, Pakistan, dental students, research participation.*

INTRODUCTION

Dental clinical practices have been enhanced over the past decade, whereas research development regarding dental clinicians and the student community of Pakistan is still in its infancy. However, the current global trends require evidence-based dentistry, and this is a research revelation that patient participation and output remain low in teaching hospitals in the country. Research is essential in developing sound clinical knowledge, refinement of clinical practice, and generation of new treatment methods. However, numerous constraints keep research from being implemented effectively in dental education and practice. The reasons for the following research culture deficiencies among dental students and practitioners in Pakistan include a lack of institutional structures, national funding, mentorship, and knowledge concerning research methods (2). The other challenge is the inadequacy of the time clinical trainees and professionals dedicated to research activities, given their clinical practice's strenuous and task-oriented nature (3).

Another major challenge encountered in the area of dentistry research is that the dental education programs in Pakistan do not have structured research programs. The amount of exposure to research that dental students get in their educational training is significantly less than that provided to medical students (4). Such absence of coursework leads to poor preparedness, lack of enthusiasm, and minimal self-confidence in undertakings such as research projects. It was also observed that most students consider research an extraneous activity and not an essential part of their learning and professional development (5). This situation is further compounded by the lack of research supervisors and mentors in the institutions, which makes it hard for students to undertake research activities (6). The lack of supervision demoralizes the students and exposes them to predicaments regarding how to carry out the designs, data collection, and analysis (7).

The other challenges that affect research in dentistry are financial constraints or lack of sponsorship in any research projects. It was also found in many teaching hospitals in Pakistan that research has not been given its deserved place in the hospitals' budgeting, which provokes the problem of inadequate resources for conducting quality research (8). Deprivation in research grants, inadequate facilities, and reduced access to new literature also contribute even more to students' and dentists' incompetence in research. This increases the research costs for students and professionals, which includes laboratory tests, statistical software, and publication fees, among others, making students and professionals abandon any research undertaking (9). However, research activities in dentistry usually involve ethical considerations and institutional clearance, which are time-consuming and have a number of barrier formalities, discouraging many students and faculty members from appearing for research activities (10).

Another factor that interferes with per capita research participation is the clinical workload. The target public includes dental students and practitioners as they usually have professionalism and tight timetables in terms of patient treatment, course work, and clinical practice. This restricts the time spent engaging in research activities and results in a sceptical enthusiasm for research projects. Clinical experience seems more valuable since it is practical and can be used during practice, while scientific activities are considered an add-on and unnecessary (11). Finally, these pressures to excel in clinical activities and to attain employment increase the odds of less emphasis on research engagement (12). Another factor is the lack of incentives for research participation due to the minimal rewards that students and other professionals expect to get when engaging in research activities.

Another challenge that retards research in dentistry is that the students, or possibly the aspiring dentists have little sensitivity and concern towards research. Many dental students tend to categorize research as an adjunct or non-essential part of their learning and functioning instead of an exercise relevant to daily practice and patient treatment. This notion stems from the reduced emphasis put on research in dental school and limited interaction with guides who do research. Further, guidelines, research discussions, and seminars are scarce in dental institutions, inhibiting the student's interest in research (13). This implies that when faculty members and the institution fail to encourage research culture in the students, the students will not be motivated to engage in research activities.

COVID-19 has affected the already increasing trend of research participation in dentistry due to the interruption of academic sessions and clinical practice in most dental facilities (14). COVID-19 limited the time spent in laboratories, funding for the studies, and the overburdening of clinicians, which reduced the possibility of getting involved in research. According to a recent survey, the academic and clinical activities of many dental students and professionals were affected by their clinical duties, which led to the temporary stagnation of various projects and a decrease in research activity in this area (13). Another factor that decreases the motivation of people to participate in research activities is the dearth of clear and definite information concerning career opportunities in dentistry. This results in students raising concerns about their employment and future profession, which makes them develop more interest in application skills rather than academic study (8). The disbelief that research is not profitable in terms of financial or professional gains, let alone discourages the students and other professionals from engaging in research activities.

To address these challenges, there is a need to include structured academic research training in the dental curricula and provide mentorship to the students. Consideration should be made to allocate funds and separate research grants for dental research and give awards for participation. It has been suggested that the establishment of research centres in teaching hospitals, as well as the incorporation of research projects in teaching and training, should be further developed (14). In addition, research workshops, conferences, and symposiums that are being conducted at the university can help students and professionals gain the exposure and motivation to undertake the research. Another way is the development of cooperation between dental institutions and research organizations to share knowledge and explore potential research opportunities.

Promoting research culture among dentists entails support from the institution and cooperation from the faculty and the students. Research should be presented as a valuable form of additional coursework and an irreplaceable part of dental education and professional growth (15). Therefore, Pakistani dental institutions would be able to increase their participation in dental research and raise the overall standard of dental healthcare practices through the removal of barriers to research participation and the promotion of a positive research culture.

Objective: The purpose of this study is to find out why dentists and dental students of teaching hospitals of Pakistan are not willing to participate in research through cross-sectional questionnaire survey.

MATERIALS AND METHODS

Study Design: Cross-sectional study.

Study setting: The study was conducted with consenting patients at Dentistry Department, Ayub Medical College Abbottabad, Pakistan

Duration of the study: The study was carried out in the duration from January 2024 to June 2024.

Inclusion Criteria:

The participants were dental students pursuing undergraduate and postgraduate studies, house officers, and teaching staff involved in clinical practice at Dentistry Department, Ayub Medical College Abbottabad, Pakistan. Participants with prior experiences either in research or those who expressed a desire to write scholarly papers were also included.

Exclusion Criteria

Employees who were not from the teaching hospital, dental practitioners in the private practice and those who declined to participate were eliminated. Furthermore, participants who completed part of the survey and those who did not provide informed consent were excluded from the study.

Methods

Cross-sectional study questionnaires developed according to the objectives of the study were self-administered among dental students, house officers and faculties at Dentistry Department, Ayub Medical College Abbottabad, Pakistan. This survey consisted of sections that raised questions concerning their demographic profiles, past research experiences, perceived barriers to research, availability of mentors, institutional support and self-motivation. Participants completed the survey online or received a printed issue of Path if they had not effectively completed the survey online. The convenience sampling technique was used in the current study because it is a non-probability technique that was used to select participants. The collected data were subsequently anonymized to participants in systems where they are unique identifiers and have their identity compromised if data is compromised. The ethical approval of this study was sought from the Research and ethics committee before the commencement of the study. It is worth noting that participants were asked to sign consent before being enrolled in the survey. The performance of the responses was described and analyzed using SPSS software, and descriptive stats were employed to summarize the results. The employees' demographic characteristics were examined in relation to research participation, and the results were compared by chi-square test statistics and logistic regression where necessary. The findings were interpreted to outline the major factors inhibiting the research participation among dental students and professionals in teaching hospitals in Pakistan.

RESULTS

A total of 250 participants, comprising 60% of the dental students, 25% of house officers and 15% of the faculty members, answered the survey. Specifically, most of the participants were likely between the ages of 20 and 30, and the number of females and males was fairly similar. Some of the most critical issues raising concerns related to research participation among the target population were identified as time constraints, inadequate postgraduate mentoring, and institutional support.

Table 1: Demographics of Participants

Characteristic	Frequency (n=250)	Percentage (%)
Gender (Male)	125	50
Gender (Female)	125	50
Age Group (20-25)	150	60
Age Group (26-30)	75	30
Age Group (>30)	25	10
Undergraduate Students	150	60
House Officers	62	25
Faculty Members	38	15

Research Experience and Interest

Overall, 35% mentioned that they had previous experience in research, while 65% of the participants stated that they had no prior experience in research. Most of them responded that the reason forcing them to conduct the study was the necessity of fulfilling the academic demands rather than the genuine interest. The most cited difficulties in the course of research included a lack of mentoring support (45%), inadequate time due to the clinical work schedule (40%), and difficulty finding grants (30%).

Table 2: Barriers to Research Participation

Barriers to Research Participation	Frequency (n=250)	Percentage (%)
Lack of time due to clinical workload	100	40
Insufficient research mentorship	113	45
Limited access to funding	75	30
Lack of interest in research	50	20
No access to research workshops	60	24

Institutional Support and Motivation

Specifically, only 30% of the participants agreed that their institution offered sufficient support in their research activities. In addition, the percentage of participants' responses showed that only 30% said that research was implemented in their curriculum. This paper reveals that about 80% of the students and house officers would have wanted to conduct research if there had been adequate direction and assistance available.

Table 3: Institutional Support and Motivation for Research

Institutional Factor	Frequency (n=250)	Percentage (%)
Sufficient research funding available	50	20
Access to research mentors	75	30
Research encouraged in curriculum	75	30
Willing to participate in research	200	80

These findings imply the requirements of well-articulated structured mentorship, adequate funding support or grants, and a research-tailored curriculum for enhancing dental students' and practitioners' participation in Pakistan.

DISCUSSION

The study outlines the challenges of subjecting respondents to research participation in dental students and teachers in teaching hospitals in Pakistan. As the study established, the effectiveness and employment of research for enhancing clinical practices and patient care cannot be overstated and irrespective of the importance of this aspect, this research revealed that a considerable number of dental students and professionals did not actively participate in research activities. These are reasons such as lack of time due to a heavy clinical schedule, lack of an adequately qualified mentor, inadequate institutional backing, and lack of sufficient funding. These challenges are consistent with previous studies done in Pakistan and other developing countries that faced the same major hurdles in research in the medical and dental disciplines (1).

The study also confirmed that only 35% of the participants had conducted research before, and in most cases, they did it to fulfil a course requirement and not as a hobby. This can be interpreted as research is not viewed as a primary component of the curriculum but as a supplement or an extracurricular activity. The poor research output may be attributed to low motivation among the students because dental curriculums do not include structured research content. Still, compared to medical studies, where research experience is significantly more comprehensive, Pakistani dental students' training in research approaches and methods, writing skills, and analysis of statistical data is quite limited. This lack of training makes the students very poor in terms of preparing them for future research projects, and they are discouraged from engaging in research projects (3).

This research has emphasized the importance of mentorship in research participation. Overall, 45% of respondents mentioned a lack of research mentors as a significant impediment to getting involved in research activities. Instructor involvement in research is a very important aspect, given the technical support and promotion of the culture of research amongst the student population (4). Regrettably, many postgraduate dental educational institutions in Pakistan have a weak structure in identifying suitable mentors for their students to guide them through their research. A study done on research challenges in medical and dental colleges of Balochistan and Punjab provinces of Pakistan revealed that students with mentors were more involved in research practices and publishing their work than their counterparts without mentors (5). Hence, to improve the standards of research culture in dental education, increasing the number and quality of academic advisors who will follow through with research mentorship from the faculty will go a long way in improving the situation (6).

Another important challenge mentioned by the participants was the lack of time due to their clinical work, with 40% of the participants agreeing that they spend little or no time conducting research activities. Currently, dental students and practitioners receive and perform a lot of academic and clinical tasks, and it is difficult for them to spend time on research. This is very worrying for house officers and young dental practitioners who are expected to deliver quality health care, undertake clinical practice, and also study (7). Often, activities that are more directly applicable in a clinical setting are considered more important than research endeavours. This feature well describes the current state of affairs in dentistry, where even today, practice orientation prevails as the significant approach to training dentists, with little or no significance given to research as one of the critical facets of professional growth (8).

Concerning the challenges experienced, the lack of funding and institutional support was also highlighted, where only 20 % of participants reported being able to get adequate research funding. Most of the students and faculty members involved in research encounter challenges in financing their research expedition, where money may be needed to carry out laboratory tests, data acquisition, and even publication of results. This is rather peculiar since there are ample research grants or funding from institutions that are available in other developed countries, and as a result, this can deter students and other practitioners from carrying out excellent dental research in the country (9). This makes it difficult for many prospective researchers to undertake academic research, making the research output disparity between Pakistani dental institutions and their counterparts even bigger (10).

The third important issue that has been identified within this study was the respondents' opinion that their institution does not emphasize enough on research since 70% of the participants agreed with

such a statement. This perception underlines a crucial problem of the lack of implementation of research in the curriculum of dental studies. There is a weak culture of research in many dental schools where there is little support from the faculty and the administration. The absence of institutional support results in students and professionals not considering research as important to their academic and professional growth (11). The research has revealed that there is a positive correlation between the research output of the institution and the presence of research capacity-building activities such as research-based courses, workshops and collaborations (12). Consequently, Pakistani dental institutions are challenged to ensure that research training is incorporated into academic faculty and schools and encourage researchers in this field (13).

Students and house officers showed research interest, and 80% expressed the willingness to participate in research if well-guided and equipped. This is positive evidence that suggests that the lack of participation is not because of the lack of interest but rather the nonexistence of the appropriate infrastructure support system. Therefore, if institutions make efforts to remove the described barriers toward research participation, there will be significant improvement among dental students and professionals. The strategy aimed at implementing new research training programs, offering grants for research, and providing opportunities for mentors can help to attract more students and faculty members to work on the research (14).

The COVID-19 pandemic extended the concerns of patient enrollment to the next level because the government guidelines of social distancing mainly prohibited patient recruitment. The pandemic also caused distortions in academic calendars, closures of laboratories, and an enlargement of patients' care toward health officials. Dental students and practitioners were forced to focus more on their clinical work as it interfered with research activities and output. The research attempts also had relatively limited participation because students disclosed that they were motivated more towards employment than in academic research in dentistry (15).

Finally, this study also points out that Pakistani dental institutions should make a conscious and active effort to encourage research involvement on a priority basis. Solutions that may include a lack of sufficient time, financial factors, and the absence of proper mentors, to a large extent, would improve the level of research participation by dental students and workers. The lack of integration of research into dental education, inadequate provision of resources and necessary faculty development needed for research, research output, and support of research-based culture in dental practice in Pakistan, dental researchers can effectively contribute towards knowledge translation in dental research and development of evidence-based practice.

CONCLUSION

The purpose of this paper is to identify the challenges that limit the involvement of dental students and practitioners in research work in teaching hospitals in Pakistan. The study has revealed that factors such as busy clinic schedules, lack of mentorship, little institutional support, and inadequate funding are the main challenges. However, a good number of participants expressed interest in research if well-assisted and or equipped enough for the work. However, to increase the research involvement of dental institutions, the curriculum should be modified to include intensive research training, mentorship programmes should be developed, and funds for research activities should be available. Also, maintaining the tradition of appreciating research in clinical practice can encourage students and other professionals to contribute positively to the knowledge base. The determination of these deficits will not only affect the research productivity of the dental institutions in Pakistan but will also increase the use of evidence-based practices in dentistry, which will eventually be good for both the dentist and the patient. Future research should focus on how these barriers may be overcome to improve the research culture in dentistry.

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