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Research Article

APTITUDE OF MEDICAL RESEARCH IN UNDERGRADUATE STUDENTS OF SAHIWAL MEDICAL COLLEGE SAHIWAL, PAKISTAN

¹Bushra Ghaffar, ¹Muhammad Rashid, ¹Hafsa Shabbir, ¹Daniyal Warraich, ²Zainab Mehdi, ¹Fatima Farooq

¹Under graduate Student, 4th year MBBS, Sahiwal Medical College Sahiwal, Pakistan, ²Under graduate Student, 2nd year MBBS, King Edward Medical University Lahore, Pakistan.

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Abstract:

Background: Research is fundamental in the acquisition of knowledge in biomedical sciences. Purpose of this study was to evaluate the aptitude of research in medical students and to find out the factors which act as an obstacle for carrying out research activity.

Methods: A simple cross-sectional study was done with the help of questionnaire. Descriptive statistics were employed to evaluate aptitude of research in medical students. Data was analyzed using SPSS version 20.

Results: 231 students of Sahiwal Medical College were surveyed. The results were analyzed considering the students' gender, age and year of study. Out of 231 students, 202 students [87.44%] were aware of medical research and 29 students [12.56%] were not aware of medical research. 116 students [50.22 %] participated in research activities while 115 students [49.78%] didn't participate in any research activity. Difficulty in finding a guide was seen as the foremost hindrance amongst 62 students [46.5%]. 98 students [42.42%] consider research as an important part of curriculum. 202 students [87.44%] think that research methodologies should be taught as a part of curriculum. 171 students [74.03%] wanted to pursue research as a career in future. 83 students [35.93%] were interested to participate in research activity.

Conclusion: Although majority of students showed positive attitudes towards clinical research, however, they reported low participation in research activities. Several barriers like lack of time, lack of interest, non-availability of necessary facilities, proper mentoring and guidance should be addressed and research should be made a compulsory part of curriculum so as to promote research activity.

Key words: Curriculum; Research; Undergraduate Students.

Corresponding author:**Bushra Ghaffar,**

Under graduate Student, 4th year MBBS, Sahiwal Medical College Sahiwal, Pakistan,.

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INTRODUCTION:

Research is defined as the creation of new knowledge or the analysis of existing knowledge in a new creative way so as to generate new concepts and understandings [1]. It is a systemic investigation in order to establish facts and reach new conclusions [2]. It develops an inquisitive and analytical thinking in students.

Research can be of following types:

- **Basic Research [Experimental]** includes animal experiments, cell studies, biochemical, genetic and physiological investigations, and studies on the properties of drugs and materials [3].
- **Clinical Research** includes both interventional studies [experimental] and non-interventional studies [or observational] [4].
- **Epidemiological Research** for investigating the distribution of diseases in particular geographical areas and the causes of these diseases [5].

The medical world is ever-evolving and it is essential, as a medical student, to keep up with the changes. Research is fundamental in the acquisition of knowledge in biomedical sciences. Carrying out small scale studies has become an integral part of the pre-clinical course at medical colleges around the globe [6]. It provides an opportunity for them to study the discipline, they are interested in or they intend to opt it in future. Research is beneficial for a student's professional life, clinical practice and for the health of the patients and communities [7].

RESULTS:**TABLES****Table 1: Demographic Characteristics of The study subjects. [n=231]**

Variable	Groups	Frequency	Percentages
Gender	Male	112	48.48
	Female	119	51.51
Age	16-20	59	25.54
	21-25	170	73.59
	26-30	02	0.86
Year of Study	1 st Year	43	18.61
	2 nd Year	15	6.49
	3 rd Year	42	18.18
	4 th Year	92	39.82
	Final Year	39	16.88

Research increases understanding of clinical medicine and improves prospects of successful application for post graduate training, grants, and publications. It also develops teamwork skills and increases exposure to the best clinical minds [8].

Research also allows an early exposure of students to ethics, which is an integral part of medical research and practice [9]. It helps the student to develop characteristics such as self-discipline and determination in order to get a result in a short period. The aim of this study was to evaluate the aptitude of research in students of Sahiwal Medical College and to assess their knowledge about research and perceived barriers towards participation in research activity. This would help us to establish a baseline data that can be later used to take measures to promote research work and to reduce the hindrances which students face while performing research work.

MATERIALS AND METHODS:

Cross-sectional study was done from 15th July to 30th July, 2020 at Sahiwal Medical College after taking approval from institutional review board of Sahiwal medical College Sahiwal. Undergraduate students of Sahiwal Medical College were included as study subjects. Convenient Sampling Technique was used. Data was analyzed by using SPSS version20, Microsoft Excel 2013 and Microsoft Word 2013.

Table 2: Responses of the students to the questionnaire. [n=231]

Questions	Groups	Frequency	Percentage
Are you aware of Medical research?	Yes	202	87.44
	No	29	12.56
Have you ever participated in research activity?	Yes	116	50.22
	No	115	49.78
If yes, why?	For a research based career	46	19.91
	An added credit while applying for higher studies in prestigious institutions	39	16.88
	Interested in building a career abroad	08	3.46
	I did not participate in any research activity	112	48.48
	Others	26	11.26
If No, Why?	Lack of time	08	6
	Lack of interest	22	16.5
	Non-availability of necessary facilities	27	20.25
	Difficulty in finding a guide	62	46.5
	Others	14	10.5
Are you aware of bodies that promote research at undergraduate level in Pakistan? e.g PHRC	Yes	139	60.17
	No	92	39.83
Have you attempted to do a short term studentship research?	Yes	80	34.63
	No	151	65.37
If no, why?	The procedure is too complicated	12	5.19
	Lack of interest	23	9.96
	Lack of time	19	8.22
	Not a compulsory part of curriculum	28	12.10
	No guidance regarding it	84	36.36
	Others	65	28.14
If yes, was your abstract accepted for grant?	Yes	76	32.9
	No	155	67.1
If you have done a research then what were its consequences?	It was approved and published	38	16.45
	A symposium was conducted	25	10.82
	It was not accepted	53	22.94
	I did not participate in any research activity	115	49.78
Do you think adequate knowledge to carry out research is imparted through curriculum?	Yes	57	24.67
	No	174	75.32
Do you consider research as an important part of your curriculum?	Yes	98	42.42
	No	60	25.97
	May be	73	31.6

Do you think research methodologies should be taught as a part of curriculum, in the forms of workshops or seminars?	Yes	202	87.44
	No	29	12.55
	Matric	20	8.64
At which educational level research should be added as an important part of curriculum?	Intermediate	47	20.35
	Undergraduate	144	62.34
	Post-graduate	20	8.66
Have you ever read any research journal?	Yes	213	92.21
	No	18	7.79
Have research journals helped you in your research activity?	Yes	121	52.38
	No	21	9.09
	I didn't read any research journal	89	38.53
Are you interested to take up clinical research as your career?	Yes	171	74.03
	No	13	5.63
	May be	47	20.35
Why do you want to take part in research activity?	I am interested in research activity	83	35.93
	For extra marks in part 1	36	15.58
	It will help me in building a career	43	18.62
	It's mandatory for my course	54	23.38
	Others	15	6.49

BAR CHARTS

FIG 1

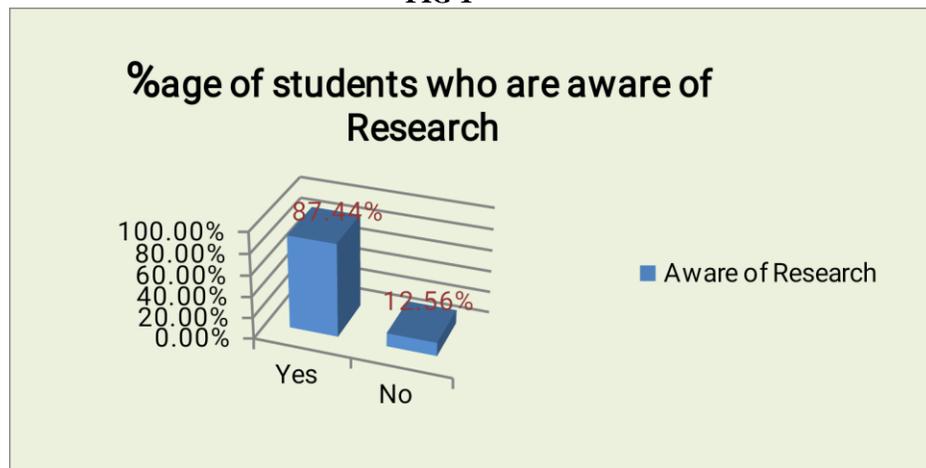


FIG 2

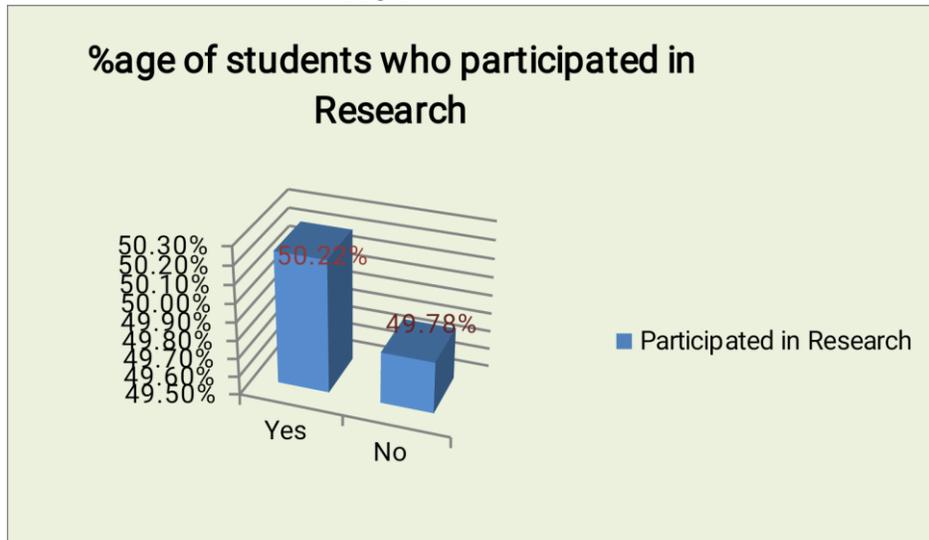


FIG 3

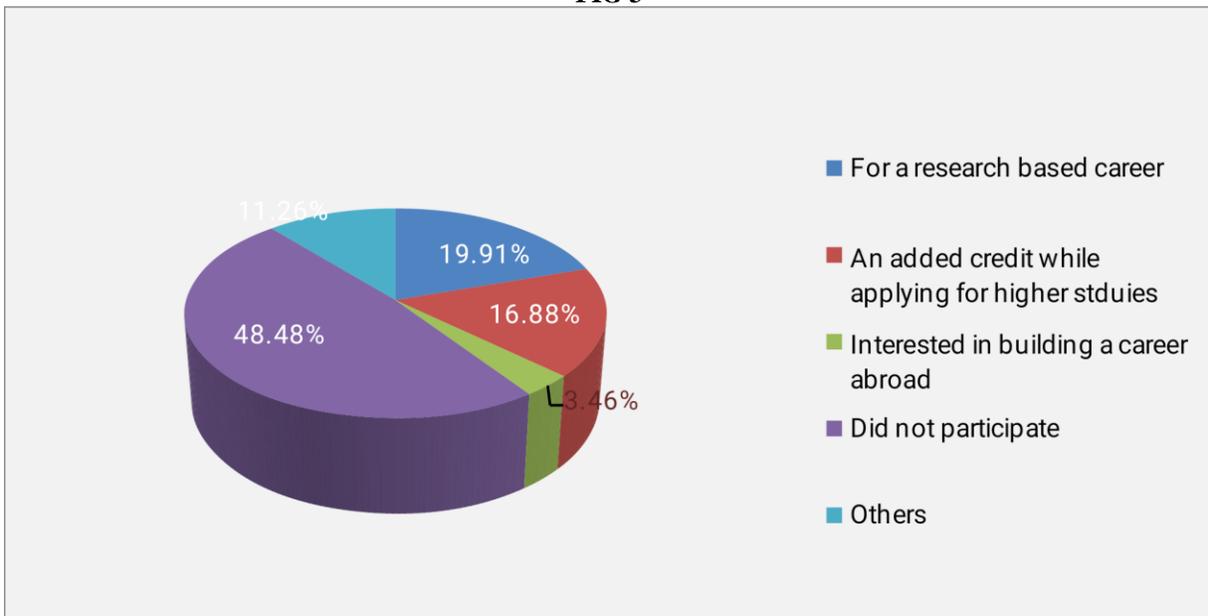
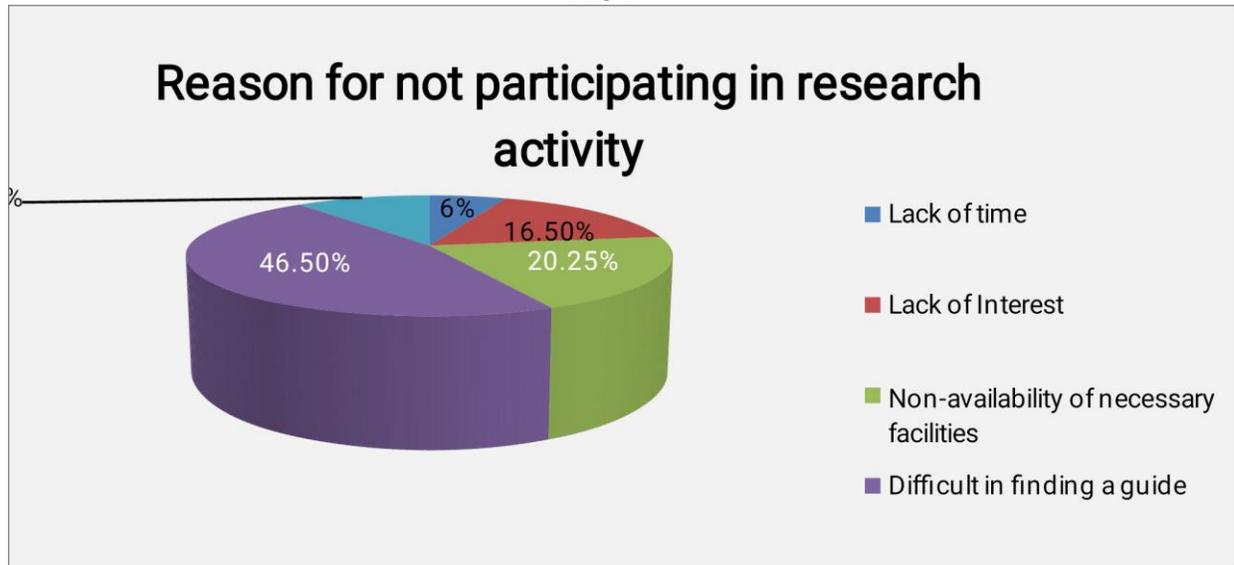


FIG 4



DISCUSSION:

Research experience is invaluable to the physician's evidence-based practice. Knowledge on medical research among undergraduates has an appropriate placement in their academic foundation and critical thinking [10]. The knowledge is important to understand the basic models in health-related literature, that being studied and to increase broad thinking and communication skills and to combat the professional competency in their specialties in future [11].

Data from Index Medicus indicates that, in 1998, globally 416,561 research articles were published of which Pakistan's contribution was very low [12]. As large number of medical colleges do not even publish a single paper in a year. Possible reasons for this baffling statistic may be lack of proper guidance, lack of time due to over-burdened schedule and lack of adequate fund [13]. In this study, it was seen that despite having a positive attitude of students towards research [87.8%] the outputs i.e. percentage of research completed among the participants we low [19.1%]. Our study results will concede with study conducted in India, where 510 students from a single medical college were included and the study concluded that only 82.35% students had appositive attitude towards research [14]. Similar results were also seen in research of Egyptian medical school, where study showed by higher positive attitude among Egyptian medical students towards clinical research [86%]; however, it associated with relatively low knowledge score [23.8%] [15].

In our study, gender difference did not have significant effect on student's knowledge, attitude or participation in research activities. A recent systemic review by Amgad and colleagues found that gender difference did not impact any of these parameters; however, males have a higher probability of publishing their medical school projects than females [16].

This study showed that difficulty in finding of guide [44.8%], non-availability of necessary facilities, [19.3%] and lack of interest [15.9%] are reasons for reduction participation. A study conducted in Shiraz University [17], Iran shows that appreciate in terms of certificates, marks or scholarships can go a long way in encouraging students to peruse research. There have been several studies indicating that including research in curriculum makes the medical students more confident about a research carrier [18, 19]. At Stanford and Duke, research is an integral part of their curriculum [20]. Similarly, programmes were conducted at University of Reading and University of Auckland. This Study shows that 93.8% of the subjects consider that workshops or seminars helped to improve research knowledge [21]. It is mandatory to organize a greater number of regional level conferences, where every student with research aptitude will get opportunity to present and discussion his/her work at common forum.

Medical students are time and again, made to realize the importance they have in the society as life savers. The impact that researcher have on millions of lives spanning our generations in often disregarded as the effect is not immediate in nature. A substantial

difference can only be brought about by alerting the mindset at the grass-root level by giving paramount importance to clinical research.

CONCLUSIONS:

After conducting study, we conclude that although majority of students have shown positive attitude towards clinical research activities associated with low knowledge scores. A number of barriers need to be addressed in order to enhance student's participation in clinical research such as lack of monitoring, funding, proper guidance, poor availability of research facilities and hectic schedule of medical students.

Seminars and symposiums should be more frequently conducted to attract more students toward research activities. Such seminars may be focused on highlighting the importance of research and its methodologies, and sharing the research work of experienced professionals so that students can get an idea about how to start a research work.

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REFERENCES:

1. Simran Kaur Bains , Preetha John , Dhanushree Nair , Sourya Acharya , Samarth Shukla, Neema Acharya; Aptitude of Medical Research in Undergraduate Students of a Medical University - Miles to go Before we Sow DOI: 10.7860/JCDR/2017/29318.10972
2. C Stone, GY Dogbey, S Klenzak, KV Fossen, B Tan & GD Brannan [2018] Contemporary global perspectives of medical students on research during undergraduate medical education: a systematic literature review, *Medical Education Online*, 23:1, DOI: [10.1080/10872981.2018.1537430](https://doi.org/10.1080/10872981.2018.1537430)
3. Al-Hilali SM, Al-Kahtani E, Zaman B, Khandekar R, Al-Shahri A, Edward DP, et al. Attitudes of Saudi Arabian undergraduate medical students towards health research. *Sultan Qaboos Univ Med J*. 2016;16:e68–73
4. Meraj L, Gul N, Zubaidazain IA, Akhter I, Iram F, Khan AS, et al. Perceptions and attitudes towards research amongst medical students at Shifa College of Medicine. *J Pak Med Assoc*. 2016;66:165–89.
5. Osman T. Medical students' perceptions towards research at a Sudanese university. *BMC Med Educ*. 2016;16:253
6. Moraes DW, Jotz M, Menegazzo WR, Menegazzo MS, Veloso S, Machry MC, et al. Interest in research among medical students: Challenges for the undergraduate education. *Rev Assoc Med Bras [1992]* 2016;62:652–8
7. Ibrahim Abushouk A, Nazmy Hatata A, Mahmoud Omran I, Mahmoud Youniss M, Fayez Elmansy K, Gad Meawad A. Attitudes and perceived barriers among medical students towards clinical research: A cross-sectional study in an Egyptian medical school. *J Biomed Educ* 2016. 2016:1–7
8. Pawar DB, Gawde SR, Marathe PA. Awareness about medical research among resident doctors in a tertiary care hospital: A cross-sectional survey. *Perspect Clin Res*. 2012;3:57–61
9. Vairamani CR, Akoijam BS. Knowledge, attitude and perceived barriers towards conducting research among students in a medical college, India. *Int J Community Med Public Health*. 2018;5:806–10.
10. Park SJ, McGhee CN, Sherwin T. Medical students' attitudes towards research and a career in research: An Auckland, New Zealand study. *N Z Med J*. 2010;123:34–42
11. Khamis N, Ibrahim R, Feyani DM. Assessment of the research oriented knowledge, attitude and practice of medical students and interns of the King Abdulaziz University, Jeddah and the adoption of a research intervention education program. *RML*. 2013;38:432–9.
12. Ahmed Abu-Zaid & Khaled Alkattan [2013] Integration of scientific research training into undergraduate medical education: a reminder call, *Medical Education Online*, 18:1, DOI: [10.3402/meo.v18i0.22832](https://doi.org/10.3402/meo.v18i0.22832)
13. Bains SK, John P, Nair D, Acharya S, Shukla S, Acharya N. Aptitude of Medical Research in Undergraduate Students of A Medical University-Miles to go Before we Sow. *Journal of Clinical & Diagnostic Research*. 2017 Dec 1;11[12].
14. Garg R, Goyal S, Singh K. Lack of research amongst undergraduate medical students in India: it's time to act and act now. *Indian pediatrics*. 2017 May 1;54[5]:357-60.
15. Wahid I, Khan DA. APTITUDE BUILDING FOR MEDICAL RESEARCH AT UNDERGRADUATE LEVEL. *Northwest Journal of Medical Sciences*. 2018 Jul 19;3[1].
16. Gupta S. Dr. Sushila Nayar Undergraduate Research Award. *Journal of Mahatma Gandhi*

- Institute of Medical Sciences. 2017 Jul 1;22[2]:127-.
17. Kelly ME, O'Flynn S. The construct validity of HPAT-Ireland for the selection of medical students: unresolved issues and future research implications. *Advances in Health Sciences Education*. 2017 May 1;22[2]:267-86.
 18. Bathala N, Chelamkuri G, Majeti S, Venkateswarlu M. An analysis on aptitude and attitude of newly joined medical students—Medical college based study in South India. *Journal of Education Technology in Health Sciences*. 2017 Dec 30;4[3]:97-101.
 19. Curtis S, Smith D. A comparison of undergraduate outcomes for students from gateway courses and standard entry medicine courses. *BMC Medical Education*. 2020 Dec;20[1]:1-4.
 20. Kadmon G, Kadmon M. Academic performance of students with the highest and mediocre school-leaving grades: does the aptitude test for medical studies [TMS] balance their prognoses?. *GMS journal for medical education*. 2016;33[1].
 21. Corrales-Reyes IE, Dorta-Contreras AJ. Students' scientific production: a proposal to encourage it. *Medwave*. 2018 Jan 31;18[01].