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Assessment of knowledge, attitude, and practices of research among faculties in medical college

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ABSTRACT

Introduction: Medical research aims to advance knowledge, skills, and professionalism. Lack of research could lead to the demise of the profession as a viable discipline. Research orientation is a concept that incorporates four subscales and provides insight into faculties' overall perception of research.
Aims and Objectives: To assess the knowledge, attitude, and practices regarding research and to identify barriers for research among medical faculty.
Materials and Methods: Our study is a questionnaire-based cross-sectional study covering 110 faculties of medical college. Data collection was done through the Edmonton research orientation survey (EROS), a pre-validated tool. EROS questionnaire consists of 50 questions in two sections –the first section containing demographic variables (12 questions) and the second section (consist of 38 items) asks the respondents to rate on a five-point Likert's scale.
Results: A high response rate (90.9%) was achieved. Sixty-five percent of respondents achieved an overall medium EROS score and 33% of respondents achieved a high EROS score (mean Eros score 132.3+21.7) indicating high research orientation. Respondents showed high subscale scores: valuing research (63%) and being at the leading edge of the profession (66%). While involvement in research (47%) and evidence-based practice (53%) scored lower. The study highlighted important barriers like lack of time, skills and support.
Conclusion: The results suggest that although faculties value research they engage less in carrying out and applying research. The positive research orientation provides an opportunity for the profession to use the available potential to increase research output.

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1. Introduction

Research is the systematic and rigorous process of inquiry, which aims to contribute to a scientific body of knowledge. "Research is frequently seen as the lifeblood, hallmark or cornerstone in the development of a profession", in that it forms its scientific basis.[1,2] Research benefits the profession in developing a scientific foundation, while benefits for the professional include the development of a critical mindset, fostering life-long and self-directed learning and understanding research literature and research results.[3]

Medical research is important to society. It gives information about disease trends, risk factors and treatment outcomes vital to public health interventions. Research in a wide range of fields like developing new medicines or medical procedures or improving the application of those already available provides help to develop guidelines for best practices to improve health, health outcomes and health services.

Engagement of teaching faculties in research is essential. Medical research wishes to advance the knowledge, skills, and professionalism of people who serve as teachers and

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mentors. Medical research also serves to keep the quality of medical education high, at both the teacher and student ends. Medical school faculty members are currently faced with increasing demands to be creative and effective teachers, successful investigators, and productive clinicians. These pressures have been derived from contemporary curriculum development, competition in the health care institutions, and the limited resources for research.[4] Although in western countries, research is widespread, in India it is a relatively recent phenomenon for medical faculty. The gap between performance in research and practice is the result of several interacting factors like limited time and resources on the part of practitioners, insufficient training and experience in research methods, statistical methodology and data analysis, and moral support during research.[5] Since 2015, MCI has declared a compulsory requirement of publications for faculty promotion purposes. The motive behind it is to encourage research among medical faculty members.[6]

'Research orientation' is a term intended as a broad construct, which provides insight into faculties' overall perception of conducting research and implementing findings into the most current health care. The concept of 'research orientation' (RO) incorporates four components, namely: 'valuing research', 'involvement in research', 'evidence-based practice' and 'being at the leading edge of the profession'. These components were identified in a study by Pain et al. who investigated the RO of Canadian occupational therapists. 'Valuing research' relates to attitudes towards it, for example, perceptions about the usefulness of research publications and the desire to use research to change clinical practice. 'Involvement in research is the behavioral aspect that relates to scientific practice, professionalism, research utilization found in other studies, participation in research execution, and research output. 'Evidence-based practice' refers to methods and the mindset of integrating research findings into the clinical reasoning process to ensure that effective interventions are provided. 'Being at the leading edge of the profession' relates to implementing new information in practice and keeping up to date with new knowledge and information.[7] The literature related to the assessment of research especially among medical faculty is quite less. This has motivated the author to take up the research subject.

2. Aims and Objectives

The study aims to assess the knowledge, attitude and practices of research by faculty members in a medical college with following objectives

1. To assess knowledge about research among medical faculties.
2. To check attitude towards research among medical faculties.
3. To identify the practices of research among medical faculties.
4. To find barriers for research among medical faculties.

3. Materials and Methods

The study was conducted at a medical college in western India after obtaining written approval from Institutional Ethics Committee.

3.1. Study design

Questionnaire-based cross-sectional study.

3.2. Study sample

Faculty members of clinical, paraclinical, and pre-clinical specialties who agreed to participate in the study.

3.3. Study duration

3 months.

3.4. Sample size

Total 110 Faculties

Edmonton research orientation survey (EROS)

Edmonton research orientation survey (EROS) was used to assess the research orientation (RO). EROS is a validated tool developed to measure respondent's knowledge, attitudes, and involvement in research. It is also a promising measure of research utilization and attitudes toward research.

EROS is a two-part self-report questionnaire measuring participation and attitude towards research.

The first section is descriptive. It includes demographic variables like age, years of clinical experience, years since graduation. It also includes research participation in previous years, self-rated understanding about research, and formal education about research design and statistics.

The second section of EROS consisting of 38 items asks respondents to rate each item on a scale from 1 (strongly disagree) to 5 (strongly agree) and provides an overall score, indicating research orientation, as well as the following four subscale scores:

1. Valuing research
2. Research involvement
3. Being at the leading edge
4. Evidence-based practice (Pain et al 1996).

The total score and subscale scores are calculated by summing the responses to items. The maximum score is 190, the higher the overall score, the stronger the RO. The scores are categorized into high (between 143 and 190 points), medium (73 -142 points), and low (0 – 72 points).[7]

The EROS has been shown to have good content, criterion, construct, and face validity.[8]

The EROS questionnaire was distributed to all faculty members of the Pre-clinical, Paraclinical, and Clinical departments of Dr. M.K.Shah medical college in person and collected back within Three weeks with repeated personal reminders. Confidentiality was ensured by anonymous responses. The overall EROS score was established for each respondent and scores were categorized into high, medium, and low.

4. Results

Table 1: Respondents' demographic and practice characteristics (n =100)

Characteristics	Number (percentage) (N=100)
Branch	
Clinical	45 (%)
Para-Clinical	38(%)
Pre-Clinical	17(%)
Degree	
MBBS	10(%)
Diploma	2(%)
PG	84(%)
PHD	4(%)
Age Group	
21-30	20(%)
31-40	47(%)
41-50	8(%)
51-60	3(%)
61-70	22(%)
Gender	
Male	57(%)
Female	43(%)
Designation	
HOD/Professor	23(%)
Associate Professor	11(%)
Assistant professor	44(%)
Tutor	22(%)

After evaluating all four subscales separately, the comparison is given for four subscales in Figure 7.

Table 2:

Subscales	% Agree
Valuing Research	63%
Involvement in Research	47%
Evidence Based Practice	53%
Being at the leading edge of the profession	66%

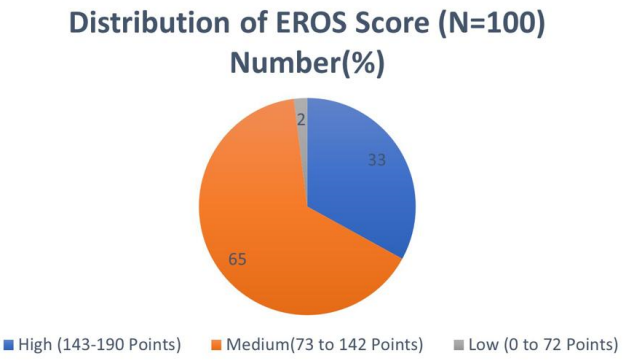

Fig. 1: Distribution of EROS scores (N=100)

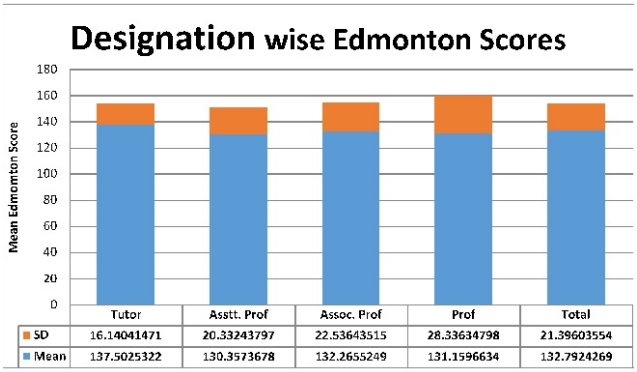

Fig. 2: Designation wise edmonton scores

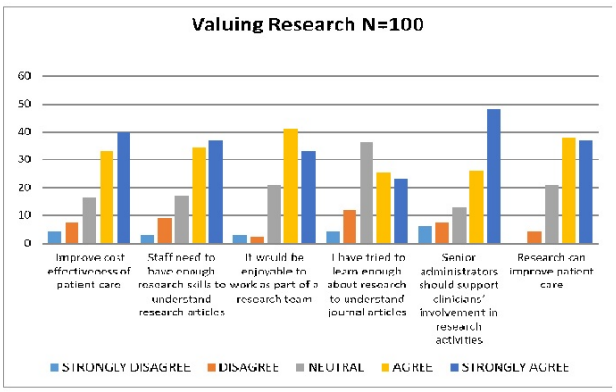

Fig. 3: Depicts responses of participants related to valuing research

5. Discussion

Responses were received from 100 faculties out of 110 faculties representing a response rate of 90.9%. Respondents' demographic and practice characteristics were noted (Table 1). The sample consisted of 57 male and 43 female participants, with the majority of the participants aged between 31 to 40 years (47%). Most of the participants reported their highest level of medical qualification as a

Table 3: Barriers to research (n = 100)

Statement	Strongly disagree (n= %)	Disagree (n= %)	Neutral (n= %)	Agree (n= %)	Strongly agree (n= %)	Total
14: I do not have time to conduct or be involved in research	12	23	34	20	11	100
15: I do not have the skills to conduct research	35	26	24	13	2	100
16: there is a lack of peer group support for research activity	13	12	35	19	21	100
Total response rate	60	61	93	52	34	

Table 4: Support for research (n=100)

Statement	Strongly disagree (n= %)	Disagree (n= %)	Neutral (n= %)	Agree (n= %)	Strongly agree (n= %)	Total
13: I would like to do more clinical research	3	15	28	17	37	100
17: resources necessary to conduct research are available	24	28	24	10	14	100
Total response rate	27	43	52	27	51	

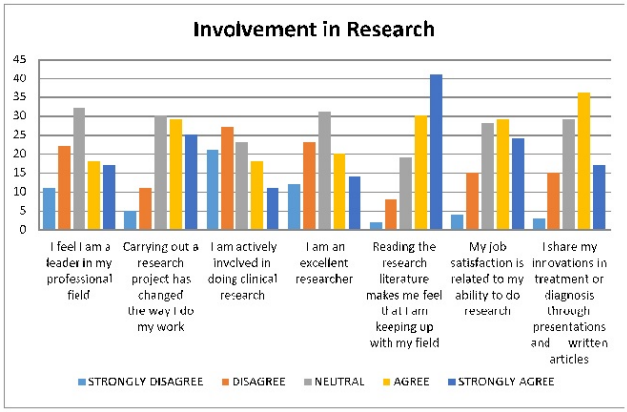

Fig. 4: Shows participants' responses related to involvement in research

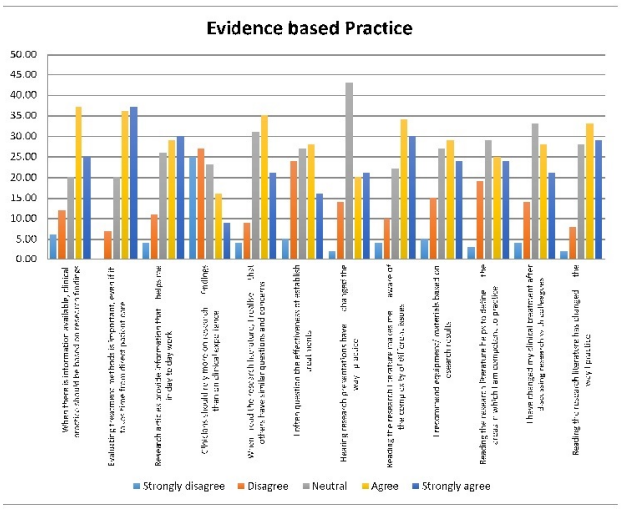

Fig. 5: Depicts responses related to the use of the evidence-based practice

postgraduate degree (84%), 10% having bachelor's degree, 4% Ph.D., and 2% diploma holders. All Faculties were working full time. Out of them, 45% were Clinicians, Para clinical faculties were 38% and Preclinical faculties were 17%. Out of a total of 100 faculties, 23% held the position of HOD/Professors, 11% were Associate Professors, 44% were Assistant professors and 22% were Tutors.

The EROS total score, indicating research orientation, was found to be of a moderate level (Figure 1). The mean overall EROS score was 132.3± 21.7 (Mean ± SD) with a possible total of 190. Sixty-five percent of respondents achieved an overall medium EROS score (73-142 points), while 33% obtained a high score (143-190) and 2% obtained a low EROS score (0-72 points). Among high scorers, only 3 had taken courses in research design or statistics. Among high scorers, 11 were Assistant Professors, 10 were holding the post of Professors, 8 were Tutors and 4 were Associate professors. (Figure 2)

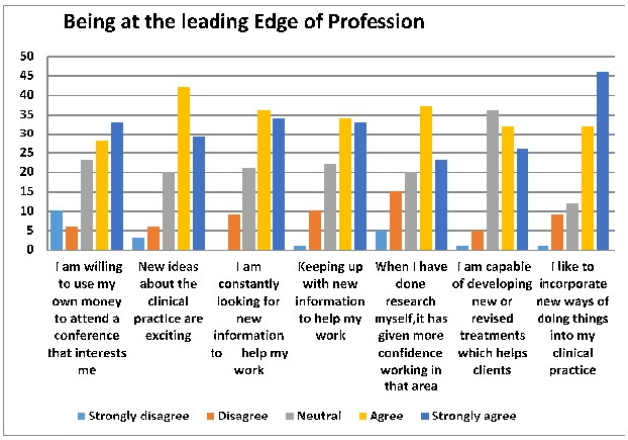

Fig. 6: Shows the distribution of responses related to being at the leading edge of the profession

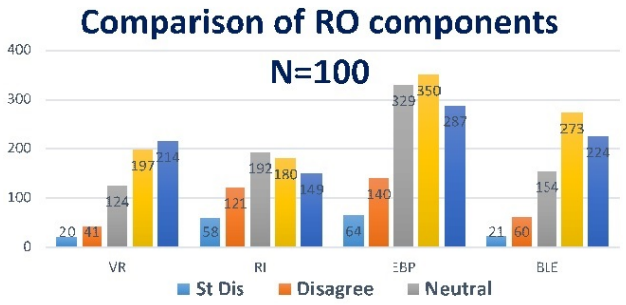

Fig. 7: Comparison of RO components

Discussing the different components of research orientation, the first subscale "valuing research "component consisted of six statements (Figure 3). Most respondents obtained a high score, while20-30% responded neutrally and 4-16% had low scores. Statements under this component that elicited strong positive responses included 'research can improve patient care (75%) and 'research improves cost-effective patient care (73%). The high scores for the component "valuing research" indicate that the participants understand the importance of research for the profession and the benefit derived from it in terms of improving patient care. The respondents also indicated that 'senior administrators should support the involvement of faculties in research activity.

The second subscale "Involvement in research" consisted of seven statements (Figure 4). Scores of this component indicated that 29% being actively involved in research, while 48% were not involved in any research activity. In support of this finding on research involvement, only 10% indicated in section 1 of EROS that they had participated in courses on research design /statistics since qualifying. According to section 1 of EROS, 22% of faculties were involved in different research projects in the last 2 years. Only 10% had presented in conferences in last 2 years whereas 11% had presentations to community or professional groups. Only 4% were researching in applied settings. However, in contrast to the above findings, 71% of the faculties agreed with the statement 'Reading the research literature makes me feel that I am keeping up with my field".

In the third subscale Evidence-based Practice (Figure 5), 62% of the faculties agreed on the statement that "clinical practice should be based on research findings".73% of the participants agreed on the statement "Evaluating treatment methods is important, even if it takes time from direct patient care". 64% of faculties agreed on the statement "Reading the research literature makes me aware of the complexity of different issues". The majority reported some implementation of research findings in their clinical practice, as indicated by the moderate rating of the EROS evidence-based practice subscale, which is a measure of research utilization.

The fourth EROS subscale "Being at the leading edge of the profession" (Figure 6), which is a measure of clinicians' willingness to access new information to guide clinical practice, was the highest-rated EROS subscale. It comprises seven statements. It appears that although respondents looked for new information as indicated in statements "I am constantly looking for new information to help my work" and "Keeping up with new information to help my work", they did seem to be equally confident in using it in their clinical settings as seen in their responses to statement "I like to incorporate new ways of doing things into my clinical practice. Positive attitudes towards research were found among the participants because they appeared to recognize the value in using research evidence to guide clinical practice.

The respondents showed high subscale scores in valuing research (63%) and being at the leading edge of the profession (66%). Yet involvement in research (47%) and evidence-based practice (53%) were limited (Figure 7).

The moderate research orientation of our study participants indicates relatively positive attitudes and average engagement in research which needs to be improved. However, the respondents were less confident in their knowledge and ability to perform research activities and were found to implement research findings in clinical practice only to some extent.

McCleary and Brown (2002) used the valuing research and evidence-based practice subscales of the EROS with 283 nurses employed at a Canadian children's hospital, in which the findings illustrated an equal moderate rating for both subscales.[8] Using the EROS, Waine et al (1997) investigated the research orientation of 293 occupational therapists in Alberta, Canada. The results indicated that participants' views towards accessing new information to guide clinical practice (EROS subscale being at the

leading edge) was rated the highest, whereas their research involvement was rated the lowest. Participants' overall research orientation was of a moderate level.[9]

Barriers to research included three items on the EROS (Table 2). Participants perceived multiple barriers associated with the organization, accessibility, and quality of research. For all three items, about 24-35% of respondents were neutral in response to the barriers indicating that the barrier did not have affected them. It has been suggested that journal clubs, which bring together a group of people to discuss journal articles, is a useful approach to overcome certain barriers associated with reviewing and understanding what is reported in the literature.[10] To overcome the barriers, institutions must provide enough financial support, training in research methodology and relevant statistical aspects of the research through workshops, and access to the services of statisticians and software packages. Ours is the first study to investigate the perceived knowledge, attitudes, practices, and barriers towards research among faculties working as medical teachers. Therefore, the findings of this study make a valuable contribution to the limited body of knowledge available investigating research orientation among medical faculties.

6. Conclusion

The medical faculties perceived their research knowledge, attitude, and practices about researching to be lower than their perceptions of accessing information or implementing research findings in practice. The strategy should be aimed to enhance research use, change the current practices, identify barriers, and then implement tailored strategies to reduce these personal, resource access, and administrative barriers. Overall, faculties would benefit from additional research education and support within their organizations and the same can be extended to the medical students will ensure that community care is based on sound high-quality research evidence.

The following suggestions for future research studies are made

1. To investigate the knowledge, attitudes, practices, and barriers to evidence-based practice and research utilization of medical faculties from other institutions of the country.
2. To examine the knowledge, attitudes, practices, and barriers to the research of medical faculty from other countries.

7. Source of Funding

None.

8. Conflict of Interest

The authors declare no conflict of interest.

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