



## To Assess The Awareness Of Research Among Undergraduate Health Profession Students: A Cross-Sectional Study

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### Abstract

Research promotes critical thinking and evidence-based practice among health profession students, but awareness and participation in India are understudied, with limited focus on barriers. To evaluate research awareness, participation, and barriers among undergraduate health profession students in India, highlighting discipline-specific differences. A cross-sectional survey was conducted with 508 students (MBBS, Pharm-D, B-Pharmacy, BSc Nursing) at Chalmeda Anand Rao Hospital and Vaageswari College of Pharmacy, Karimnagar, India, using a validated questionnaire. The sample was 50% male, with a mean age of 22.3 years. Data were analyzed in SPSS (v.26) using descriptive statistics and chi-square tests. Most participants (84.8%) recognized research types, but only 36.4% were familiar with data analysis tools. Research participation was low: 20.3% conducted studies, and 9.1% published. Key barriers included inadequate training (92.9%), funding shortages (80.7%), and limited institutional support (19.3%). MBBS and Pharm-D students demonstrated higher awareness than B-Pharmacy and BSc Nursing peers ( $p < 0.01$ ). While 88.6% valued research's role in advancing medical knowledge, only 44.3% felt motivated to engage. The gap between research awareness and participation underscores the need for structured training, mentorship, and funding in Indian undergraduate health profession curricula to foster a research-oriented mindset.

**Keywords:** Research Awareness; Medical Education; Undergraduate Students; Research Barriers; Health Professions; India

### Introduction

Research underpins healthcare innovation, enabling evidence-based practice and improved patient outcomes through systematic inquiry [1]. For health profession students, engaging in research cultivates critical thinking, enhances clinical decision-making, and prepares them to address complex health challenges [2]. In India, where communicable and non-communicable diseases strain a diverse population, research is critical for tailoring interventions and informing policy [3]. Regulatory bodies like the Indian Council of Medical Research

(ICMR) and Good Clinical Practice (GCP) guidelines ensure ethical, impactful research [4].

1. Globally, undergraduate involvement in research is limited by inadequate training, funding, and institutional support [5]. In India, while curricula emphasize clinical skills, research training is often sidelined, contributing to a shortage of physician-scientists [6]. This gap hampers students' ability to contribute to scientific knowledge and implement evidence-based care. Prior studies report variable

research awareness among Medical students, with participation rates as low as 2-20% [7-8]

2. This study assessed research awareness, participation, and barriers among undergraduate health profession students (MBBS, Pharm-D, B-Pharmacy, BSc Nursing) in Karimnagar, Telangana. By identifying knowledge gaps and obstacles, we aim to inform strategies for integrating research into medical education, fostering a culture of inquiry in India.

## Materials and Methods

A cross-sectional survey was conducted from October 2024 to March 2025 at Chalmeda Anand Rao Institute of Medical Sciences and Vaageswari College of Pharmacy, Karimnagar, Telangana. We enrolled 508 undergraduate students: MBBS (n=214), Pharm-D (n=160), B-Pharmacy (n=65), and BSc Nursing (n=69). Inclusion criteria included active enrolment in these programs. Exclusion criteria comprised physicians, medical professors, and non-healthcare students. A 30-item questionnaire was developed based on literature review [7-9] and expert consultation. It assessed: (1) awareness (e.g., research types, protocols, ethics), (2) participation (e.g., conducted research, publications), and (3) barriers (e.g., training, funding). Responses used binary (yes/no) or Likert scales. The tool was pilot-tested with 20 students (Cronbach's alpha = 0.82) and distributed online via Google Forms.

## Data Collection

Following approval from Vaageswari College of Pharmacy's Ethics Committee, participants received a standardized study explanation and provided informed consent. Data were collected electronically and exported to SPSS (v.26).

## Analysis

Descriptive statistics (frequencies, percentages) summarized awareness, participation, and barriers. Chi-square tests evaluated associations between course type and research knowledge ( $p < 0.05$  significant). Missing data (<5%) were excluded listwise. Post-analysis, low-awareness students received an educational leaflet on research methodologies.

## Results and Discussion

### Demographics

Participants (n=508) were 50% male and 50% female, aged 18-29 (mean 22.3, SD 2.1). MBBS students comprised 42.1%, Pharm-D 31.5%, BSc Nursing 13.6%, and B-Pharmacy 12.8% (Table 1).

### Research Awareness

Overall, 84.8% recognized research types, 76.0% understood protocols, and 70.7% knew ethical approval processes (Table 2). However, only 36.4% were familiar with data analysis software. MBBS (48%) and Pharm-D (44%) students showed higher awareness than B-Pharmacy (28%) and BSc Nursing (25%) peers ( $\chi^2 = 18.4, p < 0.01$ ).

### Research Participation

Only 20.3% had conducted research, 13.2% presented at conferences, and 9.1% published (Table 3). MBBS students led (28%), while BSc Nursing trailed (12%). Journal reading (32.3%) and workshop attendance (14.8%) were limited.

### Barriers

Key obstacles included inadequate training (92.9%), funding shortages (80.7%), and limited literature access (80.3%) (Table 4). Only 19.3% felt institutionally supported, and 20.1% received statistical help. Study burden (94.1%) and ethical approval difficulties (81.1%) were prevalent, though personal commitments were minor barriers (0.8%).

### Perceptions

Most students valued research's role in medical knowledge (88.6%), critical thinking (74.4%), and patient management (89.0%) (Table 5). Curriculum integration was supported by 76.8%, but motivation was low (44.3%).

### Discussion

This study reveals a stark contrast between research awareness and participation among undergraduate health profession students. While 84.8% recognized research types—higher than the 37% reported by Naveed *et al* [7]—only 20.3% conducted research, mirroring global trends [8]. MBBS and Pharm-D students outperformed others, likely due to greater curriculum emphasis on evidence-based practice.

1. Participation lags due to systemic barriers: inadequate training (92.9%), funding shortages (80.7%), and poor institutional support (19.3%). These align with prior findings [5,9], though

training deficits exceed Naveed's 76% [7] highlighting a skill gap in tools like SPSS (36.4% proficient). Faculty disinterest (90.7%) and limited resources (80.3%) further stifle engagement, consistent with Indian studies [10].

2. Despite low participation, students recognize research's value (88.6%), exceeding Naveed's 78% [7], and support curriculum integration (76.8%). However, motivation (44.3%) trails Soe et al.'s 62% [9], reflecting stress (46.3%) and resource constraints. This suggests awareness alone is insufficient without practical opportunities.
3. To bridge this gap, institutions must integrate mandatory research training, establish mentorship programs, and secure funding. Workshops (attended by 14.8%) and open-access literature could boost skills, while faculty incentives address disinterest. Such reforms could elevate India's research output<sup>11</sup> and prepare students for evidence-based practice.

### Limitations

Self-reported data may introduce bias, and the single-site design limits generalizability. Future studies should explore multi-institutional samples and longitudinal outcomes.

### Conclusion

Undergraduate health profession students exhibit high research awareness but low participation, driven by training, funding, and support deficits. Structured research education, aligned with ICMR and GCP guidelines, is essential to foster inquiry, enhance patient care, and address India's health challenges.

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### Tables

**Table 1. Participant Demographics.**

### Conflicts of Interest

None declared

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Variable	n (%)
Age (mean, SD)	22.3 (2.1)
Male	254 (50.0)
Female	254 (50.0)
MBBS	214 (42.1)
Pharm-D	160 (31.5)
B-Pharmacy	65 (12.8)
BSc Nursing	69 (13.6)

**Table 2. Research Awareness.**

Item	Yes (%)
Familiar with research types	431 (84.8)
Understand protocols	386 (76.0)
Know ethical approval	359 (70.7)
Data analysis software	185 (36.4)

**Table 3. Research Participation.**

Item	Yes (%)
Conducted research	103 (20.3)
Presented at conference	67 (13.2)
Published	46 (9.1)
Read journals regularly	164 (32.3)
Attended workshop	75 (14.8)

**Table 4. Barriers to Research.**

Barrier	Yes (%)
Inadequate training	472 (92.9)

Barrier	Yes (%)
Funding shortages	410 (80.7)
Limited literature access	408 (80.3)
Study burden	478 (94.1)
Ethical approval difficulty	412 (81.1)
Lack of institutional support	98 (19.3)

**Table 5. Perceptions of Research.**

Item	Agree (%)
Enhances medical knowledge	450 (88.6)
Linked to critical thinking	378 (74.4)
Impacts patient management	452 (89.0)
Should be in curriculum	390 (76.8)
Motivated to conduct research	225 (44.3)

12.