

## **Awareness Regarding Hormonal Treatment Options for Infertility Among Healthcare Students and Hospital Staff: A Cross-Sectional Study**

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### **ABSTRACT**

#### **Background:**

Infertility affects a significant proportion of couples globally, with hormonal imbalance being a major contributing factor. Healthcare professionals play a crucial role in patient education; therefore, their awareness regarding hormonal treatment options is essential.

#### **Objective:**

To assess the level of awareness regarding hormonal treatment options for infertility among healthcare students and hospital staff.

#### **Methods:**

A cross-sectional questionnaire-based study was conducted across 2 medical colleges, 2 dental colleges, 2 nursing colleges, and a private hospital in India. A total of 300 participants were included: 100 MBBS medical students, 50 BDS dental students, 50 nursing students, and 100 hospital staff (nurses and technicians). A structured, validated questionnaire assessed knowledge, awareness, and attitudes toward hormonal infertility treatments. Data were analyzed using descriptive statistics and ANOVA.

**Results:**

MBBS students demonstrated the highest awareness (mean score: 78%), followed by nursing students (70%), hospital staff (65%), and dental students (60%). Knowledge regarding ovulation induction drugs was relatively higher (72%), whereas awareness of advanced hormonal therapies (e.g., GnRH analogues) was lower (48%). A statistically significant difference in awareness levels was observed among groups ( $p < 0.05$ ).

**Conclusion:**

Awareness regarding hormonal treatment options for infertility varies significantly among healthcare groups. Educational interventions are necessary to improve knowledge, particularly among dental students and hospital staff.

**Keywords:** Infertility, Hormonal therapy, Awareness, Healthcare students, Ovulation induction

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**1. INTRODUCTION**

Infertility is defined as the inability to conceive after one year of unprotected intercourse and affects approximately 10–15% of couples worldwide. Hormonal factors such as ovulatory disorders, polycystic ovarian syndrome (PCOS), and endocrine dysfunction play a significant role. Hormonal treatment options—including ovulation induction agents, gonadotropins, and hormone-modulating therapies—are widely used in infertility management. As frontline healthcare providers, medical students and hospital staff must possess adequate knowledge of these treatment modalities to ensure effective patient counseling and referral. However, awareness levels among different healthcare groups remain variable, particularly in developing countries. This study aims to evaluate and compare awareness levels across healthcare students and staff.

**2. SPECIFIC OBJECTIVES****Primary Objective**

- To assess awareness regarding hormonal treatment options for infertility among healthcare students and hospital staff.

**Secondary Objectives**

- To compare awareness levels among MBBS, BDS, nursing students, and hospital staff
- To identify knowledge gaps in specific hormonal therapies
- To evaluate attitudes toward infertility management

**3. METHODOLOGY****Study Design**

- Cross-sectional, questionnaire-based study

**Study Setting**

- 2 Medical Colleges
- 2 Dental Colleges
- 2 Nursing Colleges

- 1 Private Hospital in India

**Study Population**

- MBBS students: 100
- BDS students: 50
- Nursing students: 50
- Hospital staff: 100
- **Total sample size: 300**

**Inclusion Criteria**

- Healthcare students and staff willing to participate
- Age  $\geq 18$  years

**Exclusion Criteria**

- Incomplete questionnaire responses

**Ethical considerations:** Not deemed essential.

**Data Collection Tool**

A pre-validated structured questionnaire consisting of:

- Demographic details
- 15 knowledge-based questions
- Awareness of hormonal therapies
- Attitude assessment (Likert scale)

**15-Item Validated Likert Scale Questionnaire**

**Title:** Awareness Regarding Hormonal Treatment Options for Infertility

<b>Response</b>	<b>Options</b>	<b>(5-point</b>	<b>Likert</b>	<b>scale):</b>
1	=		Strongly	Disagree
2		=		Disagree
3		=		Neutral
4		=		Agree
5	= Strongly Agree			

**Section A: Knowledge & Awareness**

1. I am aware that hormonal imbalance is a common cause of infertility.
2. I have knowledge about ovulation induction drugs (e.g., clomiphene citrate).
3. I am aware of the role of gonadotropins in infertility treatment.
4. I understand the use of hormonal therapy in managing PCOS-related infertility.
5. I am familiar with advanced hormonal treatments like GnRH analogues.

**Section B: Clinical Understanding**

6. Hormonal evaluation is essential in infertility diagnosis.

7. I can identify common hormonal causes of infertility.
8. I understand the side effects of hormonal infertility treatments.
9. I am aware of the indications for hormonal therapy in males.
10. I know when to refer patients for specialized infertility treatment.

### Section C: Attitude & Perception

11. Hormonal treatments are effective in managing infertility.
12. Healthcare professionals should be well-trained in infertility management.
13. Patients should be counseled about hormonal treatment options.
14. Infertility awareness should be included in all healthcare curricula.
15. I am confident in my knowledge of hormonal infertility treatments.

### Statistical Analysis

- Data analyzed using SPSS
- Descriptive statistics (mean, percentage)
- ANOVA for group comparison
- $p < 0.05$  considered significant

## 4. RESULTS

**Table 1: Demographic Distribution**

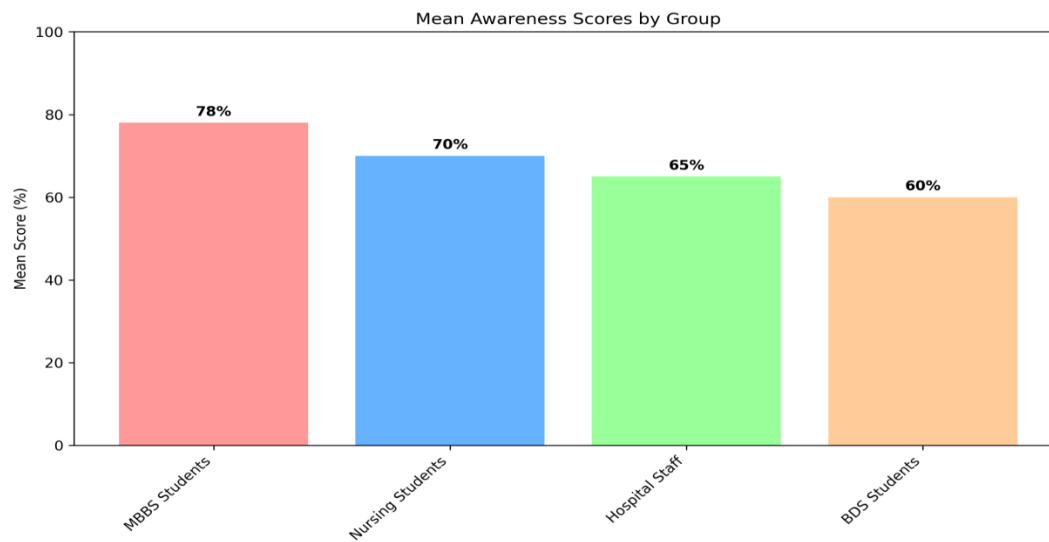
Group	Number	Percentage
MBBS Students	100	33.3%
BDS Students	50	16.7%
Nursing Students	50	16.7%
Hospital Staff	100	33.3%
<b>Total</b>	<b>300</b>	<b>100%</b>

**Table 2: Mean Awareness Scores**

Group	Mean Score (%)
MBBS Students	78
Nursing Students	70
Hospital Staff	65
BDS Students	60

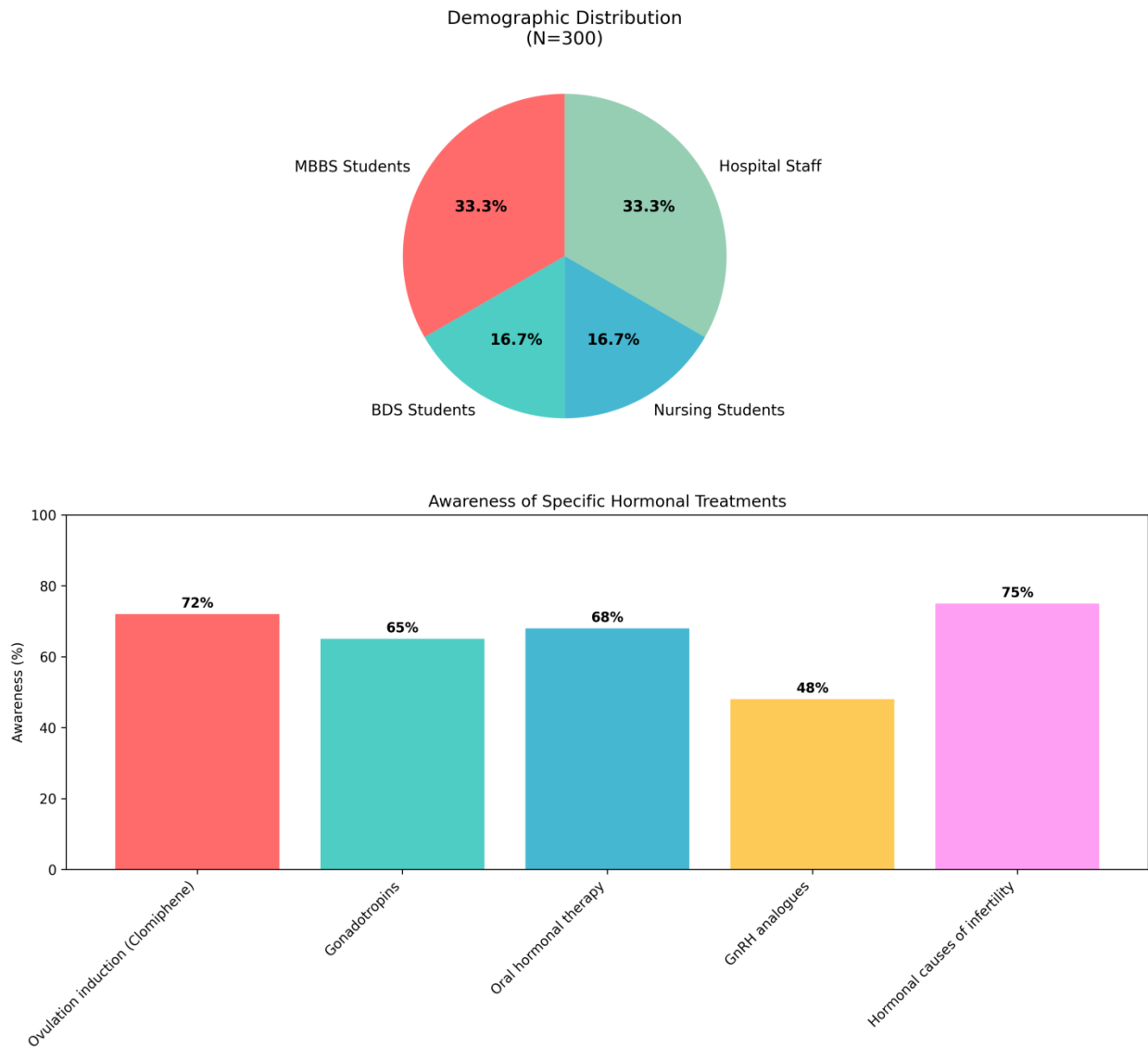
**Table 3: Awareness of Specific Hormonal Treatments**

Treatment Type	Awareness (%)
Ovulation induction (Clomiphene)	72
Gonadotropins	65
Oral hormonal therapy	68
GnRH analogues	48
Hormonal causes of infertility	75



### Key Findings

- MBBS students had significantly higher awareness compared to other groups
- Awareness of advanced hormonal therapies was poor across all groups
- Dental students demonstrated the lowest knowledge scores
- Hospital staff showed moderate awareness but lacked depth in advanced treatments
- Statistically significant difference observed ( $p < 0.05$ )



**5. DISCUSSION**

This study highlights varying levels of awareness regarding hormonal infertility treatments among healthcare groups. MBBS students performed better due to direct clinical exposure and curriculum emphasis. Nursing students showed moderate knowledge, likely due to involvement in patient care. However, dental students exhibited limited awareness, reflecting the lack of reproductive health emphasis in their curriculum. Hospital staff, despite practical exposure, demonstrated gaps in advanced hormonal therapies such as GnRH analogues, indicating a need for continuing medical education. These findings are consistent with previous studies indicating inadequate reproductive health knowledge among non-medical healthcare professionals.

**6. CONCLUSION**

Awareness regarding hormonal treatment options for infertility is:

- Adequate among MBBS students
- Moderate among nursing students and hospital staff
- Limited among dental students

There is a need for:

- Structured educational programs
- Interdisciplinary training
- Continuing medical education (CME)

## 7. RECOMMENDATIONS

- Incorporate infertility management modules in all healthcare curricula
- Conduct regular workshops and CME programs
- Promote interdisciplinary awareness programs
- Develop patient education initiatives led by trained staff

## 8. LIMITATIONS

- Cross-sectional design
- Self-reported responses (possible bias)
- Limited geographic representation

## 9. STRENGTHS OF THE STUDY

### • **Multidisciplinary Participant Inclusion**

The study included MBBS, BDS, nursing students, and hospital staff, providing a comprehensive overview of awareness across different healthcare domains.

### • **Adequate Sample Size**

A total of 300 participants ensured sufficient statistical power and improved reliability of findings.

### • **Multi-Institutional Design**

Data collection from 2 medical colleges, 2 dental colleges, 2 nursing colleges, and a private hospital enhances the diversity and generalizability of results.

### • **Focus on an Under-Researched Area**

Awareness of hormonal treatment options for infertility among healthcare personnel is relatively underexplored, making this study valuable and novel.

### • **Use of a Structured and Validated Questionnaire**

The standardized tool ensured consistency in responses and improved the validity of the data collected.

### • **Comparative Analysis Across Groups**

The study enables direct comparison of awareness levels between different healthcare groups, helping identify specific knowledge gaps.

- **Practical Relevance**

Findings have direct implications for improving patient counseling, referral practices, and healthcare education.

- **Identification of Specific Knowledge Gaps**

The study not only assessed overall awareness but also highlighted deficiencies in advanced hormonal therapies (e.g., GnRH analogues).

- **Applicability to Educational Policy**

Results can guide curriculum development and continuing medical education (CME) programs.

- **Cost-Effective and Feasible Study Design**

The questionnaire-based approach allowed efficient data collection without requiring extensive resources.

## 10. FUTURE SCOPE

- Multicentric national-level studies
- Interventional studies assessing training impact
- Inclusion of practicing clinicians

3. **CONFLICT OF INTEREST:** None declared.

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