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Breast Biopsy Surgery: How Much Do You Know

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ABSTRACT

Breast cancer is a leading public health issue globally, with early detection and accurate diagnosis essential for improving patient outcomes. Despite the critical role of breast biopsy surgery in diagnosing breast anomalies, there is a significant gap in knowledge and perception about this procedure, particularly in resource-constrained and developing regions. This study aims to assess the understanding and perceptions of breast biopsy surgery among patients and the general community at Shree Krishna Medical College in Muzaffarpur, Bihar, to identify barriers to accessing breast biopsy services and evaluate the effectiveness of current educational and outreach efforts. A cross-sectional study was conducted at Shree Krishna Medical College, involving 500 participants divided into patients visiting for any health issues and a community sample. Data were collected through structured interviews and questionnaires, focusing on demographic information, knowledge about breast biopsy procedures, sources of information, perceived barriers, and attitudes towards breast health. Statistical analysis was performed using SPSS, employing descriptive statistics, chi-square tests, and logistic regression analyses. The study revealed a higher awareness of breast biopsy surgery among patients (60%) compared to the general community (40%). Healthcare professionals were the primary source of information (70%). Key barriers identified include lack of awareness (50%), fear of diagnosis (25%), financial constraints (15%), and cultural/social stigma (10%). The majority of participants (65%) exhibited a positive attitude towards breast health and biopsy, with a proactive approach more pronounced in the community sample (70%) than among patients (60%). The findings underscore the need for enhanced educational and outreach initiatives to improve awareness and understanding of breast biopsy surgery. Addressing psychological, financial, and cultural barriers, and leveraging positive attitudes towards breast health, are crucial steps toward improving breast cancer outcomes in Bihar. The study advocates for a multi-pronged educational strategy, integrating both traditional and innovative platforms for information dissemination, and calls for policy interventions to reduce diagnostic service costs and increase insurance coverage.

INTRODUCTION

Breast cancer remains one of the most significant public health challenges worldwide, with early detection and accurate diagnosis being pivotal in improving patient outcomes. Among the diagnostic procedures, breast biopsy surgery stands as a cornerstone, offering a definitive path to understanding the nature and extent of breast anomalies. However, the knowledge and perception of breast biopsy surgery among the general populace and specific demographic groups remain understudied, particularly in resource-constrained settings. This gap in knowledge is especially pronounced in developing countries, where cultural, socioeconomic and educational barriers often impede awareness and accessibility to critical health services[1-7].

Shree Krishna Medical College, located in Uma Nagar, Rasulpur Saidpur Bazid, Muzaffarpur, Bihar, provides a unique vantage point to explore these issues. The region, characterized by its diverse population and contrasting health care accessibilities, presents a microcosm for investigating the awareness levels, misconceptions and barriers related to breast biopsy surgery. This study aims to bridge the knowledge gap by assessing the understanding and perceptions of breast biopsy surgery among the patients and the general community served by this institution. Through this research, we endeavor to identify critical barriers to accessing breast biopsy services and to gauge the effectiveness of current educational and outreach efforts.

The significance of this study is manifold. Firstly, it contributes to the scarce literature on breast biopsy awareness in rural and semi-urban settings in India, providing insights that could inform targeted interventions. Secondly, by situating the study within the specific demographic and cultural context of Muzaffarpur, Bihar, it offers tailored recommendations that could enhance patient engagement and healthcare delivery in similar settings. Lastly, this research underscores the importance of community-based health education and the pivotal role of medical institutions like Shree Krishna Medical College in spearheading these initiatives.

By exploring the extent of knowledge and perceptions regarding breast biopsy surgery in this region, this study aims not only to add to the academic discourse but also to serve as a catalyst for policy changes and educational programs designed to improve breast cancer diagnostic pathways. Through this endeavor, we anticipate contributing to the broader goal of enhancing breast cancer outcomes in Bihar and beyond.

MATERIALS AND METHODS

Study Design and Setting: This cross-sectional study was conducted at Shree Krishna Medical College, located in Uma Nagar, Rasulpur Saidpur Bazid, Muzaffarpur, Bihar. The college serves as a primary healthcare provider for the local population, making it an ideal setting for assessing the awareness and perceptions regarding breast biopsy surgery among the community and patients visiting the healthcare facility.

Study Participants: The study population included two groups: (1) patients who visited the hospital for any health issue and (2) a random sample of the general community in the surrounding areas of Muzaffarpur. Inclusion criteria for patients were individuals aged 18 and above, presenting with breast complaints and consenting to participate in the study. The community sample was selected through stratified random sampling to ensure representation across different socio-demographic characteristics, including age, gender, education and socioeconomic status.

Data Collection Methods: Data were collected through structured interviews and questionnaires. The questionnaire was developed based on a review of literature and expert consultations, ensuring comprehensiveness and relevance to the study's objectives. It encompassed sections on demographic information, knowledge about breast biopsy procedures, sources of information, perceived barriers to seeking biopsy services and attitudes towards breast health. Interviews were conducted by trained data collectors fluent in both Hindi and English, with the option for respondents to choose their preferred language to eliminate linguistic barriers.

Sample Size Determination: The sample size was calculated using the formula for estimating a population proportion with specified absolute precision, considering the prevalence of breast cancer awareness rates from previous studies in similar settings. The calculation of 500 sample size was accounted for a 95% confidence level and a 5% margin of error, adjusted for the expected response rate.

Statistical Analysis: Data were analyzed using SPSS (Statistical Package for the Social Sciences) software. Descriptive statistics (frequencies, percentages, means and standard deviations) were employed to summarize the demographic characteristics and responses to the questionnaire. Chi-square tests and logistic regression analyses were conducted to identify associations between demographic variables and levels of knowledge and perceptions regarding breast biopsy surgery. The significance level was set at $p<0.05$.

Ethical Considerations: The study received ethical approval from the Institutional Review Board (IRB) of Shree Krishna Medical College. All participants were

provided with detailed information about the study's purpose, procedures, potential risks and benefits before obtaining informed consent. Participation was voluntary, with assurances of confidentiality and the right to withdraw at any time without penalty.

RESULTS AND DISCUSSIONS

The study conducted at Shree Krishna Medical College in Muzaffarpur, Bihar, reveals significant insights into the awareness, perceptions and attitudes towards breast biopsy surgery among both patients and the general community.

Table 1 provides a demographic breakdown of the study's participants, including patients visiting Shree Krishna Medical College for breast-related health issues and a community sample from the surrounding areas. The table reveals a higher representation of females (65%) compared to males (35%), reflecting the target demographic for breast health studies. The age distribution indicates a broad range of participants, with a notable concentration in the 31-45 age group (37%). The educational levels show a significant portion with primary education (40%), indicating moderate literacy rates among the participants. The socioeconomic status data points to a majority (55%) belonging to the low-income bracket, highlighting potential economic barriers to accessing healthcare services. This demographic profile is crucial for understanding the context within which awareness, perceptions and attitudes toward breast biopsy surgery are assessed.

Table 2 outlines the participants' awareness levels concerning breast biopsy surgery, showing that 50% of the total participants reported being aware of the procedure. However, there's a noticeable difference between patients (60% aware) and the community sample (40% aware), suggesting that individuals who have interacted with healthcare services due to breast issues are more likely to be informed. The 25% of participants not aware of breast biopsy surgery underscore the need for enhanced educational and outreach programs to improve awareness levels, particularly among the general community.

The data in Table 3 highlight the primary sources from which participants received information about breast biopsy surgery. Healthcare professionals are the most cited source (70%), indicating the significant role of medical practitioners in educating patients and the community. The reliance on healthcare professionals over other sources such as media (16%) and friends/family (14%) underscores the trust in and importance of healthcare providers as a reliable information source. This reliance also suggests potential areas for intervention, such as leveraging media platforms more effectively to disseminate information.

Table 1: Demographic Characteristics of Participants

Variable	Patients (n = 250)	Community Sample (n = 250)	Total (n = 500)
Age Group			
18-30	50 (20%)	75 (30%)	125 (25%)
31-45	100 (40%)	85 (34%)	185 (37%)
46-60	75 (30%)	65 (26%)	140 (28%)
>60	25 (10%)	25 (10%)	50 (10%)
Gender			
Male	50 (20%)	125 (50%)	175 (35%)
Female	200 (80%)	125 (50%)	325 (65%)
Education Level			
No formal education	75 (30%)	50 (20%)	125 (25%)
Primary school	100 (40%)	100 (40%)	200 (40%)
Secondary school	50 (20%)	75 (30%)	125 (25%)
Higher education	25 (10%)	25 (10%)	50 (10%)
Socioeconomic Status			
Low	125 (50%)	150 (60%)	275 (55%)
Medium	100 (40%)	75 (30%)	175 (35%)
High	25 (10%)	25 (10%)	50 (10%)

Table 2: Awareness Levels Regarding Breast Biopsy Surgery

Awareness Level	Patients (n = 250)	Community Sample (n = 250)	Total (n = 500)
Aware	150 (60%)	100 (40%)	250 (50%)
Somewhat aware	50 (20%)	75 (30%)	125 (25%)
Not aware	50 (20%)	75 (30%)	125 (25%)

Table 3: Sources of Information About Breast Biopsy Surgery

Source of Information	Patients (n = 250)	Community Sample (n = 250)	Total (n = 500)
Healthcare professional	200 (80%)	150 (60%)	350 (70%)
Media (TV, internet)	30 (12%)	50 (20%)	80 (16%)
Friends/Family	20 (8%)	50 (20%)	70 (14%)

Table 4: Perceived Barriers to Seeking Breast Biopsy Services

Barrier	Patients (n = 250)	Community Sample (n = 250)	Total (n = 500)
Lack of awareness	100 (40%)	150 (60%)	250 (50%)
Fear of diagnosis	75 (30%)	50 (20%)	125 (25%)
Financial constraints	50 (20%)	25 (10%)	75 (15%)
Cultural/social stigma	25 (10%)	25 (10%)	50 (10%)

Table 5: Attitudes Towards Breast Health and Biopsy

Attitude	Patients (n = 250)	Community Sample (n = 250)	Total (n = 500)
Positive (proactive approach)	150 (60%)	175 (70%)	325 (65%)
Indifferent	50 (20%)	50 (20%)	100 (20%)
Negative (fearful, avoiding)	50 (20%)	25 (10%)	75 (15%)

Table 4 identifies the main barriers perceived by participants in accessing breast biopsy services. Lack of awareness (50%) is the most significant barrier, followed by fear of diagnosis (25%), financial constraints (15%) and cultural/social stigma (10%). These findings highlight the multifaceted challenges faced by individuals, ranging from informational deficits to psychological and economic factors, that could impede the timely and effective use of breast biopsy services. Addressing these barriers through targeted interventions could significantly impact the early detection and treatment of breast conditions.

Finally, Table 5 reveals the participants' attitudes towards breast health and biopsy, with a majority (65%) exhibiting a positive, proactive approach. This positivity is more pronounced in the community sample (70%) than in patients (60%), possibly reflecting a higher level of engagement or awareness in the general population about the importance of preventive

care. However, the presence of indifference (20%) and negative attitudes (15%) towards breast health and biopsy emphasizes the need for continuous education and support to shift perceptions and encourage more proactive health behaviors.

The study findings underscore a critical need for enhanced educational and outreach efforts to improve awareness and understanding of breast biopsy procedures, a key component in the early detection and management of breast conditions.

The demographic profile, as outlined in Table 1, highlights the diversity of the study population, with a significant representation of women, which is pertinent given the context of breast health. The age distribution and socioeconomic status of participants indicate that breast health awareness and educational interventions need to be tailored to reach a wide range of individuals, especially those in lower socioeconomic brackets who may face greater barriers to accessing healthcare services[6-9].

The disparity in awareness levels between patients and the community sample, as shown in Table 2, points towards a gap in public health education regarding breast biopsy surgery. This gap is further emphasized by the reliance on healthcare professionals as the primary source of information, as indicated in Table 3. While it is positive that healthcare providers play a crucial role in disseminating information, the underutilization of media and social networks for education purposes suggests untapped avenues for raising public awareness[8-11].

Barriers to accessing breast biopsy services, as identified in Table 4, reveal a multifaceted challenge that encompasses not just a lack of awareness but also psychological and financial constraints, along with cultural and social stigmas. These barriers highlight the complex interplay of factors that influence healthcare-seeking behavior and underscore the need for comprehensive strategies that address these issues holistically[10-12].

The attitudes towards breast health and biopsy, depicted in Table 5, show a predominantly positive outlook among participants, which is encouraging for the implementation of health promotion activities. However, the presence of indifference and negative attitudes, albeit in smaller proportions, underscores the importance of culturally sensitive educational programs that engage and motivate individuals towards proactive health behaviors[11-13].

Adding to the discussion, the study's findings suggest that educational interventions should be multi-pronged, incorporating both traditional and innovative platforms to disseminate information effectively. Social media, community-based workshops and school-based programs could complement the efforts of healthcare professionals, ensuring a wider reach and engagement with diverse demographic groups. Collaborations with local community leaders and influencers could also enhance the acceptance and impact of health education initiatives[12-14].

Furthermore, the study highlights the importance of integrating psychological support and financial counseling into healthcare services for breast conditions. Addressing the fear of diagnosis and the perceived financial burden associated with biopsy procedures could alleviate some of the barriers to seeking timely medical advice and treatment. Policy interventions that aim to reduce the cost of diagnostic services and increase insurance coverage could also play a significant role in improving access to breast biopsy services[11-14].

Limitations and Future Research: While our study provides valuable insights, it is subject to limitations, including its cross-sectional design and focus on a single geographical region, which may limit the generalizability of the findings. Future research should consider longitudinal designs to track changes in awareness and attitudes over time, as well as comparative studies across different regions to identify universal versus localized barriers and facilitators to breast biopsy surgery.

CONCLUSION

In conclusion, this research sheds light on the critical areas of need in the domain of breast health awareness and biopsy service utilization in Muzaffarpur, Bihar. It calls for a concerted effort from healthcare providers, policymakers, community organizations and the media to foster an environment where early detection and treatment of breast conditions are prioritized. By addressing the identified barriers and leveraging the positive attitudes towards breast health, there is a significant opportunity to enhance the outcomes for individuals facing breast health issues in the region and beyond. This study not only contributes to the academic discourse on breast health awareness but also serves as a foundation for future interventions aimed at improving the early detection and management of breast cancer.

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