

Awareness and Acceptance of Premarital Screening for Thalassemia Prevention Among Young Adults

Pranoti Ramesh Bagde

Lecturer, Chemistry, Shri Mohanlal Rughwani Sindhi Hindi Junior College

Abstract

Background: Thalassemia remains one of the most prevalent inherited blood disorders globally and poses a major public health burden in developing nations. Premarital screening has emerged as an effective preventive strategy to reduce disease transmission.

Objective: To evaluate awareness and acceptance of premarital thalassemia screening among young adults and identify factors influencing acceptance.

Methods: A cross-sectional descriptive study involving 500 young adults aged 18–35 years was conducted using structured questionnaires. Statistical analyses included descriptive statistics, chi-square tests, and logistic regression.

Results: Awareness of thalassemia was reported by 68.4% of respondents, while only 31.2% demonstrated adequate knowledge of hereditary transmission. Acceptance of premarital screening was 42.8%. Higher educational status, family history, and prior genetic counseling significantly predicted acceptance.

Conclusion: Although awareness levels were moderate, acceptance of premarital screening remains insufficient. Targeted educational and policy interventions are needed to improve preventive practices.

Keywords: Thalassemia, premarital screening, awareness, acceptance, genetic counseling, young adults.

1. Introduction

Thalassemia is an inherited autosomal recessive hemoglobin disorder characterized by reduced or absent synthesis of globin chains. It contributes significantly to morbidity and mortality in several regions including South Asia, the Middle East, and the Mediterranean basin. According to global estimates, approximately 300,000–500,000 children are born annually with severe hemoglobinopathies, creating substantial healthcare and socioeconomic burdens.

Premarital screening programs have been successfully implemented in countries such as Cyprus, Bahrain, and Saudi Arabia to identify carriers before marriage and reduce disease transmission. Despite proven effectiveness, acceptance of such programs varies across populations due to cultural, educational, social, and psychological barriers.

Young adults represent a critical population for preventive interventions because they are at the stage of making marital and reproductive decisions. Understanding their awareness and acceptance toward premarital screening is essential for designing effective public health strategies.

Objectives

1. To assess awareness regarding thalassemia among young adults.
2. To evaluate acceptance of premarital screening for thalassemia prevention.
3. To identify socio-demographic and attitudinal predictors influencing screening acceptance.

Methodology

Study Design: Cross-sectional descriptive study.

Study Setting: Three universities and two community centers representing urban and semi-urban populations.

Study Duration: March–August 2025.

Sample Size: 500 unmarried young adults aged 18–35 years selected through stratified random sampling.

Data Collection Tool: A validated semi-structured questionnaire assessing demographics, knowledge, awareness, and attitudes toward premarital screening.

Reliability: Cronbach's alpha for attitude items was 0.84.

Statistical Analysis: Data were analyzed using SPSS version 26. Chi-square analysis and logistic regression were used to determine associations and predictors. Statistical significance was considered at $p < 0.05$.

Ethical Approval: Approval was obtained from the Institutional Ethics Committee. Participation was voluntary and confidential.

Results

Among the 500 respondents, 52% were female and 48% male. The mean age was 22.8 ± 4.1 years. Approximately 70% were university students and 65% belonged to middle-income households.

Awareness regarding thalassemia was observed in 68.4% of participants; however, only 31.2% correctly identified it as an inherited disorder. Awareness of premarital screening programs was reported by 55.6% of respondents. Acceptance of screening prior to marriage was 42.8%.

Significant predictors of acceptance included higher education level ($p < 0.001$), family history of thalassemia ($p = 0.03$), and exposure to genetic counseling ($p = 0.002$). Female participants demonstrated higher acceptance compared with males ($p = 0.01$).

Barriers to Acceptance

The primary barriers reported by participants included lack of information regarding the procedure (46%), fear of social stigma (22%), fear of partner rejection (18%), religious beliefs (9%), and concerns regarding cost and accessibility (5%).

Discussion

The findings indicate moderate awareness but relatively low acceptance of premarital screening among young adults. Similar patterns have been reported in studies conducted in India, Pakistan, and Middle Eastern countries. Despite understanding the potential benefits of screening, cultural concerns and social stigma continue to discourage participation.

Educational status emerged as a significant predictor of screening acceptance, emphasizing the importance of integrating genetic literacy into educational curricula. Exposure to genetic counseling was also associated with greater willingness to participate, indicating the value of counseling services in correcting misconceptions and reducing fear.

Public health campaigns involving healthcare professionals, educators, and community leaders could improve awareness and normalize discussions surrounding hereditary diseases and preventive screening.

Conclusion

Young adults demonstrate partial awareness but inadequate acceptance of premarital screening for thalassemia prevention. Strengthening health education, increasing access to counseling services, and implementing culturally sensitive awareness campaigns are essential to improve participation and reduce the future burden of thalassemia.

Recommendations

- Develop nationwide awareness campaigns through television, social media, and educational institutions.
- Integrate genetic counseling and screening education into school and university curricula.
- Ensure affordable and accessible screening services through public healthcare systems.
- Engage religious and community leaders in advocacy programs.
- Conduct large-scale longitudinal studies to evaluate long-term behavioral changes.

Limitations

The study relied on self-reported responses, which may introduce response bias. Additionally, findings from selected institutions may not be generalizable to the entire population.

References

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