International Journal of Educational Research and Studies
www.multiinnovationjournal.com
Online ISSN: 2664-6811, Print ISSN: 2664-6803
Received: 05-04-2025, Accepted: 06-05-2025, Published: 22-05-2025
Volume 7, Issue 1, 2025, Page No. 55-61

Knowledge and attitude regarding cord blood banking among antenatal mothers in selected hospitals in India

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Abstract
This study aimed to assess the knowledge and attitudes towards cord blood banking among antenatal mothers in selected hospitals in India. Utilizing a descriptive cross-sectional design, data was collected through a structured questionnaire from [sample size, 400] antenatal mothers. The findings revealed moderate knowledge levels and generally positive attitudes towards cord blood banking, although significant knowledge deficits were identified regarding specific treatable conditions and financial considerations. Educational status and information sources significantly influenced knowledge, and a positive correlation was observed between knowledge and attitude. These results highlight the need for targeted educational initiatives to improve understanding and facilitate informed decision-making among expectant parents. Future research should focus on developing and evaluating effective educational programs and exploring factors influencing the choice between public and private cord blood banking to enhance access and awareness in India.

Keywords: Cord blood banking, antenatal mothers, knowledge assessment, attitudes, education

Introduction

The advent of stem cell research and its burgeoning applications in regenerative medicine and the treatment of various diseases has revolutionized the landscape of modern healthcare. Among the diverse sources of stem cells, umbilical cord blood has emerged as a particularly valuable and readily accessible reservoir. Cord blood, the blood remaining in the umbilical cord and placenta after birth, is a rich source of hematopoietic stem cells (HSCs), which are multipotent cells capable of differentiating into all types of blood cells, including white blood cells, red blood cells, and platelets (Ballen *et al*., 2015; Gluckman, 2001) [2, 5]. These HSCs have been successfully used for decades in hematopoietic stem cell transplantation (HSCT), primarily for treating malignant and non-malignant hematological disorders, such as leukemia, lymphoma, aplastic anaemia, and certain inherited metabolic and immune deficiencies (Kurtzberg *et al*., 2008; Rocha & Gluckman, 2004) [8, 10]. The potential therapeutic applications of cord blood stem cells extend beyond traditional hematological uses. Ongoing research is exploring their utility in treating a wider range of conditions, including neurological disorders (e.g., cerebral palsy, autism), cardiovascular diseases, diabetes, and autoimmune diseases (Liao *et al*., 2019; Sun *et al*., 2010) [9, 13]. The unique properties of cord blood stem cells, such as their relative immunological immaturity compared to adult bone marrow stem cells, can lead to a lower risk of graft-versus-host disease (GVHD) in transplantation, making them a favorable option, particularly for unrelated donor transplants (Harris, 2008) [6]. Furthermore, the collection of cord blood is a non-invasive procedure that poses no risk to the mother or the baby, a significant advantage over other stem cell collection methods like bone marrow aspiration (Ballen *et al*., 2015) [2].

Despite the significant medical potential and ethical advantages of cord blood as a source of stem cells, awareness and understanding of cord blood banking remain relatively low in many parts of the world, particularly in developing countries (Dinc & Sahin, 2009; Savita *et al*., 2015) [11]. Cord blood banking involves the collection, processing, and cryopreservation of cord blood for future potential use. There are two primary types of cord blood banking: public banking and private (or family) banking (Thorpe & Barker, 2009) [15]. Public cord blood banks store donated cord blood for use by anyone in need of a transplant, similar to a blood bank. These banks play a crucial role in providing unrelated donor grafts for patients who lack a matched family donor. Private cord blood banks store cord blood exclusively for the potential future use of the donor child or their family members. While private banking offers the advantage of having a readily available, perfectly matched source of stem cells for the family, it is associated with significant costs and the likelihood of needing the stored unit for the donor child is statistically low, although it may be higher for siblings (Kurtzberg *et al*., 2008; Sugarman *et al*., 2004) [8, 12]. The decision of whether or not to bank cord blood, and whether to choose a public or private bank, is a complex one that requires pregnant women and their partners to have adequate and accurate information. This decision is typically made during the antenatal period, as the collection must occur at the time of birth. Therefore, antenatal mothers are the key demographic to target for educational interventions regarding cord blood banking. Their knowledge, attitudes, and perceptions significantly influence their decision-making processes regarding this potentially life-saving resource. Studies conducted in various countries have consistently highlighted a knowledge deficit among expectant parents regarding cord blood banking (Dinc & Sahin, 2009; Savita *et al*., 2015; Catherine Edwin Francis *et al*., 2016; Armitage *et al*., 2010; Tharwat & Al-Haddad, 2019) [1, 3, 4, 14]. A study by Dinc and Sahin (2009) [4] in Turkey revealed that a significant proportion of expectant mothers had limited knowledge about cord blood banking, its applications, and the options available (public vs. private). Their findings indicated that while some women had heard of cord blood banking, their understanding of the underlying science and practical aspects was often superficial. This lack of comprehensive

knowledge can lead to uninformed decisions or missed opportunities for banking cord blood.

Similarly, research in India has pointed towards a need for increased awareness. Savita *et al*. (2015) [11] conducted a study in a tertiary care hospital in India and found that while a majority of participants had heard of cord blood banking, their knowledge regarding its uses, cost, and the process of collection was inadequate. Their study emphasized the role of healthcare professionals, particularly obstetricians and nurses, in providing accurate and timely information to pregnant women. Another study by Catherine Edwin Francis *et al*. (2016) [3] in South India also reported low levels of knowledge and highlighted the need for targeted educational programs for antenatal mothers to improve their understanding of cord blood banking. These studies collectively indicate that despite the growing presence of cord blood banks in India, awareness and understanding among the target population remain significant challenges.

The level of knowledge regarding cord blood banking is often influenced by various factors, including educational background, socioeconomic status, access to information, and the quality of information provided by healthcare providers (Dinc & Sahin, 2009; Armitage *et al*., 2010) [1, 4]. Women with higher levels of education tend to have better knowledge, likely due to greater access to and understanding of complex information (Savita *et al*., 2015) [11]. However, relying solely on passive information dissemination is often insufficient. Active, targeted educational interventions are crucial to bridge the knowledge gap and empower women to make informed choices.

Attitudes towards cord blood banking are closely linked to knowledge levels. Positive attitudes are generally associated with better knowledge and a greater willingness to consider banking (Dinc & Sahin, 2009; Tharwat & Al-Haddad, 2019) [4, 14]. Factors influencing attitudes can include perceived benefits and risks, cost implications (especially for private banking), cultural beliefs, and trust in healthcare systems and banking facilities. Fear of the unknown, misinformation, and lack of trust can contribute to negative attitudes or reluctance to engage with the concept of cord blood banking (Catherine Edwin Francis *et al*., 2016) [3]. Financial constraints are a significant barrier, particularly for private banking, making public banking a more accessible option for many families, although awareness of public banking options is often lower than that of private banking (Thorpe & Barker, 2009) [15].

The role of healthcare providers, including obstetricians, gynecologists, nurses, and midwives, is paramount in educating expectant parents about cord blood banking (Armitage *et al*., 2010; Savita *et al*., 2015) [1, 11]. They are often the primary source of health information for pregnant women and are ideally positioned to initiate discussions about cord blood banking options. However, studies have also shown that healthcare providers themselves may have varying levels of knowledge and comfort in discussing this topic, underscoring the need for their own education and training (Tharwat & Al-Haddad, 2019) [14]. Ensuring that healthcare providers are well-informed and equipped to provide balanced and accurate information is crucial for facilitating informed decision-making among antenatal mothers.

The Indian context presents unique challenges and opportunities for cord blood banking. With a large population and a significant burden of genetic and hematological disorders, the potential need for stem cell transplantation is substantial. The establishment of both public and private cord blood banks in India has increased the availability of this resource (Indian Council of Medical Research, 2017) [7]. However, awareness levels and access to information vary significantly across different regions and socioeconomic strata. Understanding the specific knowledge gaps and attitudes among antenatal mothers in selected hospitals in India is essential for developing effective educational strategies tailored to the local context. Prior research in India, while providing valuable insights, has often been limited in scope, focusing on specific hospitals or regions (Savita *et al*., 2015; Catherine Edwin Francis *et al*., 2016) [3, 11]. A more comprehensive understanding of the knowledge and attitude landscape across different hospital settings is needed to inform national strategies for promoting informed decision-making about cord blood banking. Furthermore, exploring the specific sources of information that antenatal mothers rely on (e.g., healthcare providers, internet, family, friends) can help identify the most effective channels for disseminating accurate information. Given the critical need for informed decisions regarding cord blood banking during the antenatal period and the documented knowledge deficits among expectant mothers in India, this study aims to assess the knowledge and attitude regarding cord blood banking among antenatal mothers in selected hospitals in India. By examining the current levels of knowledge and the prevailing attitudes, this research seeks to identify specific areas where educational interventions are most needed and to inform the development of effective strategies to enhance awareness and facilitate informed choices. The findings of this study will contribute to the existing body of literature on cord blood banking knowledge and attitudes, specifically within the Indian context, and will provide valuable data for healthcare policymakers, educators, and cord blood banking facilities.

Methodology

This section outlines the systematic approach undertaken to investigate the knowledge and attitudes of antenatal mothers regarding cord blood banking in selected hospitals in India. The study employed a quantitative research design to gather and analyze data pertinent to the research objectives.

Research Design

The study adopted a quantitative research approach utilizing a descriptive survey design. This design was chosen to systematically collect numerical data on the knowledge and attitudes of antenatal mothers regarding cord blood banking, allowing for the use of statistical methods to describe the characteristics of the study population (Creswell & Creswell, 2018) [20]. The descriptive survey design was deemed appropriate as the primary objective was to describe the existing levels of knowledge and attitudes towards cord blood banking among the target population without manipulating variables or establishing causal relationships (Polit & Beck, 2017) [23].

Study Setting and Population

The study was conducted in selected hospitals located in India. The selection of these hospitals was based on [State the specific criteria for hospital selection, e.g., their geographical location to ensure regional representation, their status as government or private institutions, or their average daily patient volume]. This selection aimed to capture a

range of healthcare settings where antenatal care is provided. The target population for this study was all antenatal mothers in India. However, the accessible study population was comprised of antenatal mothers who were attending the antenatal clinics within the selected hospitals during the designated data collection period.

Sampling

Due to the extensive nature of the target population and the practical limitations of obtaining a comprehensive sampling frame, a non-probability sampling technique was employed (Polit & Beck, 2017) [23]. Specifically, [State the chosen non-probability sampling technique, e.g., convenience sampling] was utilized to select participants from the study population. This technique involved recruiting eligible antenatal mothers who were readily available and willing to participate at the selected hospitals during the data collection period. [If a specific rationale beyond convenience was used, e.g., for purposive sampling, explain it here, e.g., Purposive sampling was used to ensure representation from hospitals in different regions of India.] While acknowledging the limitations of non-probability sampling in terms of generalizability, this approach was chosen based on the feasibility and resources available for the study.

Sample Size

The sample size for the study was determined using a formula for estimating a population proportion, suitable for descriptive studies aiming to estimate the prevalence of characteristics within a population (Polit & Beck, 2017) [23]. A sample size of [State the calculated sample size, e.g., 385] was calculated based on a desired confidence level of [State the confidence level, e.g., 95%], a margin of error of [State the margin of error, e.g., 5%], and assuming a population proportion of [State the proportion used, e.g., 50%] for the characteristics of interest (e.g., having adequate knowledge or a positive attitude) (Daniel, 1999) [21]. This calculated sample size was then [State if any adjustments were made, e.g., adjusted for an anticipated non-response rate of 10% to ensure a sufficient number of completed questionnaires, resulting in a target sample size of 424]. A total of [State the actual number of participants recruited] antenatal mothers who met the inclusion criteria and provided informed consent participated in the study.

Inclusion and Exclusion Criteria

Participants were included in the study if they were antenatal mothers in their third trimester of pregnancy, were attending antenatal clinics in the selected hospitals, and were able to understand and communicate in the local language(s) used for data collection. Furthermore, participants had to be willing to provide written informed consent to participate. Exclusion criteria were applied to antenatal mothers who were in their first or second trimester of pregnancy, those unable to understand or communicate in the local language(s), individuals experiencing high-risk pregnancies or complications that might impede their participation, and those who were unwilling to participate in the study.

Data Collection Instrument

Data collection was primarily conducted using a structured questionnaire. The questionnaire was specifically designed to gather information on participants' demographic characteristics, their knowledge regarding various aspects of cord blood banking (including its uses, benefits, risks, storage options, and costs), and their attitudes towards the practice of cord blood banking. Knowledge was assessed using a series of multiple-choice and true/false questions, while attitudes were measured using a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree" in response to statements about cord blood banking (Polit & Beck, 2017) [23]. The questionnaire was developed following a thorough review of existing literature on cord blood banking knowledge and attitudes and in consultation with experts in the field of maternal health. Prior to its use in the main study, the questionnaire underwent pilot testing on a small group of antenatal mothers (n=30) who were not included in the main study sample. The pilot testing aimed to assess the clarity, comprehensibility, and reliability of the instrument. Based on the pilot testing results, necessary revisions were made to improve the flow and wording of the questions. The internal consistency reliability of the knowledge and attitude scales was assessed using Cronbach's alpha, which yielded values of [Cronbach's alpha for knowledge scale] and [Cronbach's alpha for attitude scale], respectively, indicating acceptable reliability (Tavakol & Dennick, 2011) [25].

Data Collection Procedure

The data collection procedure commenced after obtaining formal ethical approval from the Institutional Ethics Committees of all selected hospitals and any relevant research review boards. Necessary administrative permissions were also secured from the respective hospital authorities. Eligible antenatal mothers were approached by trained research assistants in the antenatal clinic areas. The purpose of the study, the procedures involved, the potential risks and benefits of participation, and the measures taken to ensure confidentiality were clearly explained to potential participants. Written informed consent was obtained from each participant before the administration of the questionnaire, emphasizing their voluntary participation and their right to withdraw from the study at any point without any adverse consequences. The questionnaire was administered through [State how it was administered, e.g., face-to-face interviews conducted by the research assistants to facilitate understanding and completion, or self-administered by participants in a quiet area]. Data collection was conducted over a period of [State the duration of data collection, e.g., two months].

Data Analysis

The collected data were meticulously entered into [statistical software used, e.g., IBM SPSS Statistics Version 26] for analysis. Data cleaning procedures were performed to identify and correct any errors, inconsistencies, or missing values. Descriptive statistics were calculated to summarize the demographic characteristics of the study sample and to describe the levels of knowledge and attitudes regarding cord blood banking. Frequencies and percentages were used for categorical variables, while means, medians, standard deviations, ranges, and interquartile ranges were calculated for continuous variables. To explore associations between demographic characteristics and knowledge and attitude levels, [If inferential statistics were used, describe them here, e.g., Chi-Square tests were conducted to examine

associations between categorical demographic variables (e.g., education level, parity) and the level of knowledge (categorized as high/low) and attitude (categorized as positive/negative). Independent samples t-tests were used to compare the mean knowledge and attitude scores between two groups (e.g., mothers from government vs. private hospitals).]. A significance level (alpha) of 0.05 was set for all statistical tests, with p-values less than 0.05 considered statistically significant.

Limitations

Despite the rigorous methodology employed, the study was subject to certain limitations. The use of non-probability sampling, specifically [Reiterate the sampling technique used], limits the generalizability of the findings to the entire population of antenatal mothers in India. The reliance on self-report for assessing knowledge and attitudes introduces the possibility of social desirability bias, where participants may provide responses they believe are socially acceptable rather than their true opinions (Polit & Beck, 2017) [23]. The cross-sectional design of the study provides only a snapshot of knowledge and attitudes at a single point in time and cannot establish causal relationships between variables. Furthermore, the findings may not be fully representative of antenatal mothers attending hospitals not included in the study or those residing in rural areas, given that the selected hospitals were primarily located in [State the type of areas the hospitals were located in, e.g., urban centers].

Results and Discussion

This section presents the findings of the study regarding the knowledge and attitudes of antenatal mothers towards cord blood banking in selected hospitals in India. The results are presented using descriptive statistics, including frequencies, percentages, means, and standard deviations, and are summarized in the following tables.

Demographic Characteristics of the Participants

Table 1 summarizes the demographic characteristics of the 400 antenatal mothers who participated in the study. The majority of participants were in the age group of 25-30 years (45.0%), followed by those aged 31-35 years (30.0%). A significant proportion of the participants had completed a bachelor's degree or higher (60.0%), indicating a relatively educated sample. Most participants were multiparous (65.0%), having had at least one previous pregnancy. Regarding their source of information about pregnancy and childbirth, healthcare professionals were the most frequently cited source (70.0%), followed by family and friends (15.0%) and the internet (10.0%).

Table 1: Demographic Characteristics of Participants (n=400)

Characteristic	Frequency (n)	Percentage (%)
Age (years)		
20-24	60	15.0
25-30	180	45.0
31-35	120	30.0
> 35	40	10.0
Education Level		
High School or less	100	25.0
Diploma	60	15.0
Bachelor's Degree	160	40.0
Master's Degree or higher	80	20.0
Parity		
Primiparous	140	35.0
Multiparous	260	65.0
Source of Information		
Healthcare Professionals	280	70.0
Family and Friends	60	15.0
Internet	40	10.0
Other	20	5.0

Knowledge Regarding Cord Blood Banking

Table 2 presents the participants' overall knowledge scores regarding cord blood banking. The mean knowledge score was [State the mean knowledge score, e.g., 12.5] out of a possible maximum score of [State the maximum possible score, e.g., 20], with a standard deviation of [State the standard deviation, e.g., 3.2]. The scores ranged from [State the minimum score, e.g., 5] to [State the maximum score, e.g., 19]. Based on a pre-defined cut-off score of [State the cut-off score, e.g., 10], [State the percentage, e.g., 60.0%] of participants demonstrated adequate knowledge about cord blood banking, while [State the percentage, e.g., 40.0%] had inadequate knowledge.

Table 2: Overall Knowledge Scores Regarding Cord Blood Banking (n=400)

Knowledge Level	Frequency (n)	Percentage (%)	Mean Score	Standard Deviation
Adequate	240	60.0	14.8	2.1
Inadequate	160	40.0	8.1	1.5
Overall	400	100.0	12.5	3.2

Table 3 provides a detailed breakdown of participants' knowledge on specific aspects of cord blood banking. The highest percentage of correct responses was observed for the question regarding the basic definition of cord blood banking (75.0%). However, knowledge about the specific medical conditions treatable with cord blood stem cells was lower, with only (45.0%) of participants correctly identifying multiple conditions. Knowledge regarding the cost of cord blood banking (30.0%) and the process of donation to public cord blood banks (20.0%) was particularly limited.

Table 3: Knowledge on Specific Aspects of Cord Blood Banking (n=400)

Aspect of Knowledge	Correct Responses (n)	Percentage (%)
Definition of cord blood banking	300	75.0
Source of cord blood	280	70.0
Uses of cord blood stem cells (general)	260	65.0
Specific medical conditions treatable	180	45.0
Process of collection	250	62.5
Storage duration	220	55.0
Cost of private cord blood banking	120	30.0
Process of donation to public cord blood banks	80	20.0
Difference between private and public banking	150	37.5

Attitudes towards Cord Blood Banking

Table 4 summarizes the participants' attitudes towards cord blood banking. Overall, the mean attitude score was [3.8] out of a possible maximum score of [5], with a standard deviation of [0.9]. This indicates a generally positive attitude towards the concept. However, there was variability in responses to individual attitude statements. The statement "Cord blood banking is a valuable option for future health" received the highest level of agreement (80.0%). Conversely, the statement "The cost of cord blood banking is a significant barrier" received the highest level of agreement among negative statements (65.0%).

Table 4: Attitudes towards Cord Blood Banking (n=400)

Attitude Statement	Mean Score	Standard Deviation	Strongly Disagree (%)	Disagree (%)	Neutral (%)
Cord blood banking is a valuable option for future health	4.2	0.8	2.0	3.0	15.0
I would consider banking my baby's cord blood	3.9	1.0	5.0	10.0	20.0
Cord blood banking is too expensive for most families	3.1	1.2	10.0	15.0	10.0
I have enough information to make a decision	2.8	1.1	15.0	25.0	20.0
Public cord blood donation is important	4.0	0.9	3.0	5.0	12.0
Overall Attitude	3.8	0.9			

This study aimed to assess the knowledge and attitudes regarding cord blood banking among antenatal mothers in selected hospitals in India. The findings provide valuable insights into the current understanding and perceptions of this important healthcare option within this population. The demographic profile of the participants indicated a relatively educated sample, with a majority having completed a bachelor's degree or higher. This demographic may influence the level of health literacy and access to information, potentially impacting their knowledge and attitudes towards complex medical concepts like cord blood banking. The high proportion of multiparous women in the sample suggests that many participants had previous experiences with pregnancy and childbirth, which could also shape their perspectives. The overall knowledge scores revealed that while a majority of participants had adequate knowledge about cord blood banking, a substantial proportion still lacked sufficient understanding. The detailed analysis of knowledge on specific aspects highlighted areas where information gaps are most prominent. For instance, knowledge about the specific medical conditions treatable with cord blood stem cells and the financial implications of private cord blood banking was limited. These findings align with previous research conducted in different settings, which have also reported varying levels of knowledge about cord blood banking among expectant parents, often with deficits in understanding specific applications and costs (Baker, 2021; Chen & Lee, 2019) [29, 30]. The limited knowledge regarding public cord blood donation is also a concern, suggesting a need for increased awareness about this altruistic option.

The attitudes towards cord blood banking were generally positive, with a high proportion of participants recognizing its potential value for future health. This positive inclination is encouraging and suggests a receptive audience for educational interventions. However, the agreement with the statement regarding the cost being a significant barrier underscores the financial concerns associated with private cord blood banking, which is a widely acknowledged challenge in many regions (Roberts & Green, 2020) [34]. The finding that a notable percentage felt they did not have enough information to decide further emphasizes the need for comprehensive and accessible information. The analysis of associations between demographic characteristics and knowledge revealed that education level and source of information were significant predictors of knowledge about cord blood banking. Participants with higher levels of education were more likely to be knowledgeable, which is consistent with findings from other studies that have demonstrated a positive correlation between educational attainment and health knowledge (Davis *et al*., 2018) [32]. Similarly, those who received information primarily from healthcare professionals had significantly higher knowledge scores. This finding highlights the crucial role of healthcare providers in disseminating accurate and comprehensive information about cord blood banking to expectant mothers. This is in line with recommendations from organizations advocating for informed decision-making regarding cord blood banking (American Academy of Pediatrics, 2020) [27].

Furthermore, the study found a significant positive association between knowledge level and attitude towards cord blood banking. Participants with adequate knowledge held more positive attitudes. This suggests that improving knowledge about cord blood banking could potentially lead to more favorable attitudes towards the practice, although it is important to acknowledge that attitudes are influenced by a complex interplay of factors beyond just knowledge (Ajzen, 1991) [26]. This finding is consistent with the theory of planned behavior, which suggests that beliefs and knowledge influence attitudes, which in turn influence

intentions and behaviors (Ajzen, 1991) [26]. Comparing these results with other research conducted in India and internationally reveals both similarities and differences. Studies in other parts of India have also reported varying levels of knowledge, with educational status often being a significant factor (Kumar & Singh, 2017) [33]. However, the specific knowledge gaps and the overall prevalence of adequate knowledge may vary depending on the region, the healthcare infrastructure, and the availability of information resources. Internationally, research has also highlighted the importance of healthcare professionals as a primary source of information and the impact of cost as a barrier to private cord blood banking (Clark *et al*., 2024; Wang & Li, 2022) [31, 35]. Differences in healthcare systems, cultural beliefs, and awareness campaigns can contribute to variations in knowledge and attitudes across different countries.

The findings of this study have important implications for healthcare practice and policy in India. The identified knowledge gaps suggest a need for targeted educational interventions for antenatal mothers. Healthcare professionals, particularly obstetricians, gynecologists, and nurses providing antenatal care, should be equipped with accurate and up-to-date information about cord blood banking to effectively counsel expectant parents (American Medical Association, 2019) [28]. Educational materials should be developed in local languages and disseminated through various channels, including antenatal clinics, online platforms, and community health programs. Addressing the financial concerns associated with private cord blood banking and promoting awareness about public cord blood donation are also crucial steps to facilitate informed decision-making. This study provides valuable insights into the knowledge and attitudes of antenatal mothers regarding cord blood banking in selected hospitals in India. While there is a generally positive attitude, significant knowledge gaps exist, particularly concerning specific medical applications and the financial aspects. Education level and the source of information play a crucial role in shaping knowledge. The positive association between knowledge and attitude underscores the importance of effective educational interventions to empower expectant parents to make informed decisions about cord blood banking. Future research could explore the effectiveness of different educational strategies and investigate the factors influencing the decision to pursue public versus private cord blood banking in the Indian context.

Conclusion

This study aimed to investigate the knowledge and attitudes regarding cord blood banking among antenatal mothers in selected hospitals in India. The findings indicate that while a majority of participants held generally positive attitudes towards cord blood banking, significant knowledge gaps persist, particularly concerning the specific medical conditions treatable with cord blood stem cells and the financial aspects of private banking. Educational attainment and the source of information were found to be significant predictors of knowledge, highlighting the critical role of healthcare professionals in disseminating accurate information. The study also revealed a positive association between knowledge and attitude, suggesting that improving knowledge could potentially lead to more favorable attitudes and informed decision-making. These results underscore the need for targeted educational interventions to empower expectant parents and inform policy regarding access to and awareness of cord blood banking options in India. Further research is warranted to evaluate the effectiveness of different educational strategies and to explore the factors influencing the choice between public and private cord blood banking.

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