

Acceptance and Attitude of Muslim Pregnant Women on Transvaginal Ultrasound Scan

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ABSTRACT

The lack of comprehensive research addressing the acceptance and attitudes of Muslim pregnant women toward transvaginal ultrasound scans presents a significant knowledge gap in obstetrics and gynecology. This gap is particularly pertinent due to the pivotal role ultrasound scans play in prenatal care, making it imperative to understand the unique perspectives of diverse patient populations, including Muslim women. This research endeavors to fill a notable void in the scientific literature by investigating the acceptance and attitudes of Muslim pregnant women toward transvaginal ultrasound scans. Utilizing a quantitative research design, data were collected from 150 Muslim pregnant women in Iligan City. The findings revealed a high level of acceptance and favorable attitudes among the respondents, with strong correlations between willingness to undergo transvaginal scans and overall attitudes. Concerns about privacy and confidentiality exhibited a negative correlation with these variables, reflecting the complex interplay of factors influencing patient perspectives. Despite certain limitations, this study represents a pioneering effort in addressing this knowledge gap and underscores the significance of patient awareness and understanding in shaping their acceptance of medical procedures. Recommendations include tailoring healthcare practices and patient education to meet the unique needs of Muslim pregnant women, while future research should aim to expand the study's scope for broader applicability in enhancing prenatal care for this demographic.

KEYWORDS: acceptance; attitudes; Muslim; pregnancy; transvaginal ultrasound

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1. Introduction

Muslim women are known to be one of the most conservative women in the world [1]. The meaning behind their conservativeness directly involves their devotion to God (Allah). Their clothing, behaviors, social norms, etc., signify their submission to Allah. This conservativeness involves their perceptions of anything involving their body, from the skin to their private parts being exposed to someone other than their husbands. Therefore, they are reluctant to the ideas and processes even for medical purposes that

require them being naked and/or having their private parts exposed, such as in transvaginal ultrasound [2].

Ultrasound is an essential radiological examination device that has undoubtedly influenced the success of clinical exercises in recent years. Over the previous years, transvaginal ultrasound scan (TVS) has been given to girls with seemingly regular pregnancies to assess fetal abnormalities and the risk of preterm birth [3]. TVS is a diagnostic tool to evaluate the condition of the female pelvis, where a high-frequency transducer is inserted into the vagina in close anatomical proximity to the pelvic structures. It is ideal for evaluating ovulation and oocyte recovery for infertile patients. This procedure eliminates imaging difficulties in obese patients, patients with high intestinal gas, and patients with insufficient bladder filling. Increasingly used in obstetric environments, TVS enhances many transabdominal ultrasound (TAS) shortcomings, especially concerning an accurate assessment of appendage tumors and pregnancy.

TVS has generated diverse responses from the public since its introduction. Despite their benefits, including improved imaging, certain pregnant women, regardless of their religious affiliation, may hesitate to undergo such examinations [4]. The primary factor contributing to this reluctance is the perception of vulnerability associated with the exposure of the vaginal area during the procedure. Additionally, the insertion of devices into the vagina and the discomfort stemming from foreign objects within the reproductive organ, visualizing internal structures, contribute to this apprehension.

In Australia, ultrasound examiners commonly perform TVS as a regular part of their practice. However, conducting TVS studies can expose ultrasound examiners to an increased risk of complaints and legal issues due to the intimate nature of the procedure [5]. Best practice guidelines have been established to address these concerns and ensure patient satisfaction and optimal health outcomes. These guidelines, endorsed by the Australasian Society of Medical Ultrasound, outline when it is appropriate to perform TVS, emphasize the importance of patient privacy and confidentiality, recommend suitable transducers, and encourage third-party involvement in ultrasound examinations. Despite these guidelines, ultrasound technicians, or sonographers, often encounter various practical challenges and questions in their daily work that the guidelines do not specifically address [5]. These challenges include making appropriate choices regarding patient escorts, handling situations where a patient refuses to have a caregiver present, and considering the appropriateness of male sonographers performing TVS.

Prior research indicated that pregnant women's perception of TVS plays a pivotal role in shaping their views and willingness to undergo the procedure [6]. The study found that only a few respondents were unaware or had not been informed about this specific type of ultrasound, with most possessing a sufficient understanding of it. When asked if they would be open to undergoing TVS if medically necessary, nearly all respondents expressed willingness to do so. Regarding perceived risks, respondents identified abortion, infection, and bleeding as potential complications associated with TVS.

In another study regarding perceptions and attitudes towards TVS, findings indicated that a significant proportion (50.6%) of respondents with secondary education exhibited a positive attitude towards TVS [7]. Moreover, a majority (63.1%) of participants preferred female ultrasound technicians. Most respondents (54.1%) did not find TVS uncomfortable, while 78% reported no stress during the procedure. Nearly all respondents (96.9%) emphasized the importance of having a professional ultrasound technician present, and 46.7% preferred having an attendant in the room. Almost all participants (98.4%) felt they had sufficient privacy, and 84.7% believed receiving prior information was essential. Regarding future acceptance, a significant percentage (82%) of respondents expressed willingness to consent to future TVS examinations. Notably, the majority (90.5%) reported experiencing no pain, while a small proportion (8.6%) reported mild pain or discomfort, and only 0.9% reported moderate pain. In summary, the survey concluded that respondents generally held positive attitudes towards TVS and were willing to accept it in the future, indicating a high level of acceptability. However, it was observed that higher educational attainment was associated with greater acceptance.

Given the potential invasion of patients' privacy during transvaginal ultrasound (TVS), there is a pressing need for a study that delves into the attitudes and perceptions of female patients towards this procedure. Prior research has generated divergent findings: some studies suggest that TVS is well-tolerated and discomfort-free, whereas others have reported patient discomfort [8,9]. In line with these observations, this study seeks to gauge the level of acceptance and the overall attitude of Muslim women towards TVS. This research is particularly significant because previous studies predominantly featured non-Muslim respondents. The study aims to discern whether the attitudes and acceptance levels of the selected Muslim women in Iligan City differ from those in prior research. Notably, this study represents a pioneering effort in the Philippines, as no local literature or studies akin to this one were identified, underscoring its potential to make a valuable contribution to the existing body of knowledge.

2. Methodology

This research utilized a non-experimental quantitative approach, specifically employing a descriptive correlation method. The study was conducted in Iligan City, encompassing healthcare institutions such as St. Mary's Maternity and Children's Hospital, Gregorio T. Lluch Memorial Hospital, and E&R Hospital. The research sample consisted of 150 Muslim women residing in Iligan City who had not previously undergone Transvaginal Ultrasound Scans and possessed no prior knowledge of such procedures. These individuals were chosen as participants due to their suitability for providing the required information aligned with the study's objectives. The selection process entailed verifying whether the participants had prior exposure to Transvaginal Ultrasound Scans before their inclusion in the study.

For participant selection, the researchers employed a simple random sampling technique. Randomly selecting Muslim women from the chosen hospitals aimed to reduce potential bias in respondents' perceptions due to the researchers' presence.

Ensuring respondents were acquainted with the researchers and understood the study's purpose was vital to obtaining honest and unbiased responses.

To collect data efficiently and effectively, a self-structured questionnaire was employed. This questionnaire was designed to be answered using a four-point Likert Scale, chosen for its simplicity, ability to maintain focus, time efficiency, and consisting of 30 questions. Care was taken to ensure the statements in the questionnaire were respectful and relatable to the respondents by translating them into their preferred languages, Meranao and Visaya dialects.

The questionnaire solely focused on assessing the acceptance and attitude of respondents toward Transvaginal Ultrasound Scans. Pilot testing was carried out to validate the questionnaire's reliability and validity. The pilot test involved distributing the survey questionnaires in various locations beyond the study area, such as malls and clinics, to assess its effectiveness in gathering the necessary data.

The data collection process began with a formal request to the dean of the College of Radiologic Technology. After obtaining approval, the researchers personally administered the questionnaires to the respondents. A letter seeking permission was attached to the questionnaires, and clear instructions were provided to ensure accurate responses.

Given the COVID-19 pandemic, strict safety guidelines were followed during data collection, including physical distancing, avoiding physical contact, and mask-wearing. These precautions made data gathering more challenging and time-consuming.

Subsequently, the collected data were compiled, sorted, and categorized. Statistical analysis was performed using the Statistical Package for Social Science (SPSS IBM 21), involving descriptive statistics like frequency counts, means, and standard deviations. Additionally, the data were analyzed using the Weighted Mean and Standard Deviation to gauge the level of acceptance and attitude among respondents. The Pearson Product Moment Coefficient of Correlation was employed to identify significant relationships in respondents' acceptance and attitude toward Transvaginal Ultrasound Scans.

Ethical considerations were paramount throughout the research. The privacy of respondents was protected, and their personal information remained confidential. Steps were taken to ensure participants' safety and informed consent, and participants were free to withdraw from the study at any point. The researchers refrained from making statements that could influence participants' confidence or perceptions and personally administered the questionnaires to maintain confidentiality and address any participant queries.

3. Results

Table 1 indicates that the respondents generally possess a high level of acceptance regarding transvaginal ultrasound scans. They have a high level of awareness regarding general ultrasound scans and a high level of awareness about transvaginal scans. In addition, the acceptance to undergo transvaginal scans is high.

Table 1. Level of acceptance on transvaginal ultrasound scan.

Items	Mean ± SD	Descriptive Rating
Awareness of general ultrasound scan	2.98 ± 0.68	High
Awareness of transvaginal scan	3.09 ± 0.74	High
Acceptance to undergo transvaginal scan	3.10 ± 0.71	High
Overall	3.06 ± 0.71	High

Note: 3.25-4.00=Very High; 2.50-3.24=High; 1.75-2.49=Low; 1.00-1.74=Very Low

Table 2. Attitudes on transvaginal ultrasound scan.

Items	Mean ± SD	Descriptive Rating
Willingness to undergo transvaginal scan	3.19 ± 0.58	High
Risks of breach privacy and confidentiality	3.22 ± 0.56	High
Presence of third-party during process	3.12 ± 0.63	High
Overall	3.18 ± 0.59	High

Note: 3.25-4.00=Very High; 2.50-3.24=High; 1.75-2.49=Low; 1.00-1.74=Very Low

Table 3. Correlation between acceptance and attitudes on transvaginal ultrasound scan.

Variables	r-value			
	Willingness to undergo transvaginal scan	Risks of breach privacy and confidentiality	Presence of third-party during process	Overall attitudes
Awareness of general ultrasound scan	0.78***	-0.69***	0.71***	0.72***
Awareness of transvaginal scan	0.78***	-0.72***	0.73***	0.73***
Acceptance to undergo transvaginal scan	0.79***	-0.71***	0.71***	0.73***
Overall acceptance	0.78***	-0.71***	0.71***	0.72***

Note: *** $p < 0.001$.

Table 2 suggests that the respondents maintain a high overall attitude toward transvaginal ultrasound scans. They generally have a high level of willingness to undergo transvaginal ultrasound scans and maintain a high overall attitude toward the procedure. While they express some concerns about privacy and confidentiality risks, these concerns do not significantly detract from their overall positive attitude toward transvaginal ultrasound scans.

Table 3 shows strong and significant correlations between willingness to undergo transvaginal scans, concerns about privacy and confidentiality risks, acceptance of a third-party presence during the process, overall attitudes, and various aspects related to awareness and acceptance of transvaginal ultrasound scans. Specifically, respondents' willingness to undergo transvaginal scans has a strong positive correlation with awareness of general ultrasound scans, awareness of transvaginal scans, acceptance to undergo transvaginal scans, and overall acceptance. This suggests that individuals who are more willing to undergo transvaginal scans tend to be more aware and accepting of these scans.

Concerns about the risks of breach of privacy and confidentiality exhibit a strong negative correlation with the same variables: awareness of general ultrasound scans,

awareness of transvaginal scans, acceptance to undergo transvaginal scans, and overall acceptance. This indicates that those with greater concerns about privacy and confidentiality risks tend to have lower levels of awareness and acceptance of transvaginal ultrasound scans.

Acceptance of the presence of a third-party during the process is positively correlated with awareness of general ultrasound scans, awareness of transvaginal scans, acceptance to undergo transvaginal scans, and overall acceptance. This implies that individuals who are more accepting of third-party involvement tend to have higher levels of awareness and acceptance regarding transvaginal ultrasound scans.

Overall attitudes toward transvaginal ultrasound scans are positively correlated with awareness of general ultrasound scans, awareness of transvaginal scans, acceptance to undergo transvaginal scans, and overall acceptance. This suggests that individuals with more positive overall attitudes tend to have higher levels of awareness and acceptance of these scans.

4. Discussion

In this study, the respondents generally hold a high level of acceptance regarding transvaginal ultrasound scans. Their high level of awareness regarding general ultrasound scans and transvaginal scans suggests that they are well-informed about these procedures. Furthermore, their high level of acceptance to undergo transvaginal scans signifies a positive disposition toward this specific type of ultrasound procedure. These findings align with prior research in the field. A study by Souza et al. reported similar results, indicating that informed patients tend to exhibit higher levels of acceptance and willingness to undergo medical procedures [10]. In the context of ultrasound scans, awareness and understanding of the procedure's purpose and benefits contribute significantly to a positive attitude [6].

Meanwhile, the respondents maintain a high overall attitude toward transvaginal ultrasound scans. Their high level of willingness to undergo such scans reflects a positive inclination toward the procedure. While some respondents express concerns about privacy and confidentiality risks, these concerns do not significantly diminish their overall positive attitude. These findings resonate with previous studies examining patient attitudes toward medical procedures. In a previous study, it was found that patients' overall attitudes toward medical interventions were shaped by a combination of their willingness to undergo the procedure and their concerns about associated risks [10]. This balance between acceptance and apprehension is not uncommon in the context of medical decision-making [11].

This study reveals compelling correlations between various aspects of acceptance, attitudes, and awareness. Notably, willingness to undergo transvaginal scans positively correlates with awareness, acceptance, and overall attitudes. Conversely, concerns about privacy and confidentiality negatively correlate with these variables. Acceptance of the presence of a third-party during the process also positively correlates with awareness, acceptance, and overall attitudes. These correlations corroborate findings from earlier research. For instance, a study by Rafoul et al. observed a strong positive association between patients' willingness to undergo a medical procedure and their overall attitudes toward it [12]. Moreover, concerns about privacy and confidentiality have been consistently identified as factors that can impede patient acceptance of medical procedures, as noted in previous studies [13,14].

While the findings of this study provide valuable insights into the acceptance and attitudes of Muslim pregnant women toward transvaginal ultrasound scans, it is important to acknowledge its limitations. First, the study was conducted in a specific geographical area, and the sample size was limited to 150 respondents from Iligan City. This geographic and demographic restriction may limit the generalizability of the findings to a broader population of Muslim pregnant women. Additionally, the survey instrument used in this study, while carefully designed and pretested, may not capture all potential factors influencing acceptance and attitudes toward transvaginal ultrasound scans.

Despite these limitations, it is essential to recognize that this study represents a pioneering effort in the field. To the best of our knowledge, it is the first study conducted to specifically investigate the acceptance and attitudes of Muslim pregnant women regarding transvaginal ultrasound scans. The research contributes valuable initial insights into this underexplored area, serving as a foundation for future investigations and potentially guiding healthcare practices tailored to the needs and preferences of this specific demographic group. While further research is warranted to build upon these findings and address the identified limitations, this study serves as a significant step toward better understanding and meeting the healthcare needs of Muslim pregnant women in the context of ultrasound procedures.

5. Conclusion

In conclusion, this study has provided valuable insights into the acceptance and attitudes of Muslim pregnant women toward transvaginal ultrasound scans. The findings highlight a high level of acceptance and positive attitudes among the respondents, underscoring the significance of awareness and understanding in shaping their willingness to undergo this medical procedure. Moreover, the correlations emphasize the interplay between willingness, concerns about privacy and confidentiality, and overall attitudes, shedding light on the complex nature of patient perspectives in healthcare decision-making.

Despite the limitations inherent in the study's geographical and demographic scope, this research represents a pioneering effort in addressing a crucial gap in the literature. It serves as the first known investigation into the acceptance and attitudes of Muslim pregnant women specifically concerning transvaginal ultrasound scans. As such, it lays the groundwork for future research endeavors in this area.

Based on the insights gleaned from this study, a short recommendation would be to consider tailoring healthcare practices and patient education efforts to ensure that Muslim pregnant women, like any other patient group, receive comprehensive information and support regarding transvaginal ultrasound scans. Addressing their concerns about privacy and confidentiality while enhancing their awareness of the procedure's benefits may further contribute to fostering a positive healthcare experience for this specific demographic. Additionally, future research should aim to expand the geographical and demographic scope to ensure broader applicability of the findings and to better understand the diverse perspectives within the Muslim pregnant women population.

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Conflict of Interest Statement

The authors declare no conflict of interest.

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