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A Theory-Based Examination of Nurses' Preventive Intentions and Attitudes Toward Cervical Cancer in Mosul

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Abstract

Background: Cervical cancer remains a pressing public health challenge, particularly in low- and middle-income countries (LMICs) such as Iraq, where limited awareness, inadequate screening programs, and strong cultural barriers hinder prevention. Nurses play a pivotal role in cervical cancer prevention through patient education, screening advocacy, and vaccine promotion. However, their knowledge, cultural attitudes, and behavioral intentions remain underexplored within the Iraqi healthcare context.

Objective: This study aimed to assess the knowledge, cultural attitudes, and behavioral intentions of nurses toward cervical cancer prevention in Mosul, Iraq, using the Theory of Reasoned Action (TRA) as a conceptual framework.

Methods: A descriptive cross-sectional study was conducted among 105 nurses working in three maternal hospitals in Mosul. Data were collected using a structured questionnaire consisting of four sections: demographic data, knowledge assessment, cultural attitude scales, and behavioral intention measures. Descriptive and inferential statistical analyses, including Pearson's correlation and chi-square tests, were conducted using SPSS version 25 to examine relationships among variables.

Results: The findings revealed that while most nurses demonstrated moderate knowledge of cervical cancer symptoms and screening methods (notably HPV vaccination awareness at 78.1%), significant gaps persisted in understanding HPV as a causal agent (35.2%) and in recognizing key risk factors (43.8%). Cultural attitudes were largely negative, shaped by stigma and conservative beliefs, which impeded engagement in prevention efforts. Despite these barriers, a notable proportion of nurses expressed intentions to educate patients (42.9%) and advocate for screening (41.9%). No significant associations were found between most demographic variables and knowledge or attitudes, except for years of experience in obstetrics and gynecology, which significantly influenced knowledge ($p = 0.005$).

Conclusion: This study underscores critical knowledge deficits and cultural challenges affecting nurses' engagement in cervical cancer prevention in Mosul. Applying the Theory of Reasoned Action, the findings suggest that enhancing knowledge and addressing cultural barriers through targeted training and policy support is essential for empowering nurses in their preventive roles. These insights can guide national health strategies aimed at reducing the cervical cancer burden in Iraq.

What is already known about the topic?

Cervical cancer is one of the most preventable cancers, primarily through HPV vaccination and regular screening. Despite this, it remains a leading cause of cancer-related mortality among women in low- and middle-income countries (LMICs), including Iraq.

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Introduction

Cervical cancer is one of the leading causes of cancer-related deaths among women worldwide, particularly in low- and middle-income countries (LMICs) such as Iraq, where preventive healthcare systems remain underdeveloped (Nguyen et al., 2023; Sharma et al., 2020). According to the World Health Organization (WHO), approximately 90% of the 342,000 cervical cancer-related deaths in 2020 occurred in LMICs, highlighting significant disparities in access to screening and vaccination services (Sharma et al., 2020).

In Iraq, national efforts to control cervical cancer remain limited. The uptake of the human papillomavirus (HPV) vaccine is low, and organized screening programs are scarce due to logistical challenges, cultural norms, and low public awareness (Obaid et al., 2023; Kasim, 2023). In Mosul, a city recovering from prolonged conflict, the healthcare infrastructure remains fragile, further complicating the delivery of preventive services (Ahmed et al., 2024).

HPV vaccination and early screening, such as Pap smears and HPV DNA testing, are highly effective in reducing the incidence of cervical cancer (Abu-Rustum et al., 2023; Buskwofie et al., 2020). However, healthcare providers' capacity to implement these strategies is hindered by systemic and cultural obstacles. Nurses, as frontline caregivers, are uniquely positioned to influence cervical cancer prevention through patient education and advocacy. Their knowledge, cultural attitudes, and behavioral intentions are crucial in shaping preventive behaviors in the community (Sharp et al., 2024; Ind, 2021).

The Theory of Reasoned Action (TRA) provides a useful framework to explore how attitudes and perceived social norms influence nurses' intentions to engage in preventive behaviors (Lau et al., 2023; Ng, 2020). By applying the TRA model, this study investigates the complex interplay between nurses' knowledge, cultural beliefs, and behavioral intentions regarding cervical cancer prevention in Mosul.

Aim of the Study

To evaluate the knowledge, cultural attitudes, and behavioral intentions of nurses regarding cervical cancer prevention in Mosul, Iraq, using the Theory of Reasoned Action (TRA) framework.

Methods

Study Design

This study employed a **descriptive cross-sectional design** to assess nurses' knowledge, cultural attitudes, and behavioral intentions toward cervical cancer prevention. The Theory of Reasoned Action (TRA) was used as the theoretical framework guiding variable selection and interpretation.

Study Setting

The study was conducted in three major maternal and teaching hospitals located in Mosul, Iraq:

- Al-Salam Teaching Hospital
- Al-Butool Teaching Hospital
- Al-Rafidain Medical Hospital

These hospitals were selected due to their large nursing workforce, maternity specialization, and accessibility for data collection.

Study Population and Sample

The target population included **registered nurses** working in maternal and gynecological wards. Inclusion criteria were:

- Currently employed in one of the selected hospitals
- Having at least one year of clinical experience
- Willingness to participate in the study

A **convenient sampling technique** was used to recruit **105 nurses** who met the inclusion criteria.

Instrumentation

Data were collected using a **structured, self-administered questionnaire** designed by the researcher and validated by a panel of experts. The questionnaire comprised four sections:

1. **Demographic Information** (e.g., age, gender, years of experience, education level)
2. **Knowledge Scale** – assessing understanding of cervical cancer risk factors, symptoms, screening methods, and HPV vaccination
3. **Cultural Attitudes Scale** – exploring beliefs and cultural norms related to cervical cancer and preventive behavior

4. **Intentions Scale** – evaluating nurses' intentions to engage in cervical cancer prevention activities (e.g., patient education, vaccination promotion)

The instrument was developed based on existing literature and aligned with the TRA model constructs (attitudes, subjective norms, and behavioral intentions).

Validity and Reliability

The content validity of the questionnaire was established through expert review by five faculty members in nursing and public health. A **pilot study** involving 10 nurses (excluded from the main study) was conducted to assess clarity and comprehension. **Cronbach's alpha** was used to test internal consistency reliability, with acceptable values (>0.70) obtained for all subscales.

Data Collection Procedure

Data collection occurred between **January and March 2025**. Hard copies of the questionnaire were distributed during working hours, with an explanation provided to participants. Completed questionnaires were collected within one week.

Data Analysis

Data were entered and analyzed using **SPSS version 25**.

- Descriptive statistics (frequencies, means, standard deviations) were used to summarize demographic characteristics and questionnaire responses.
- **Pearson's correlation coefficient** was used to assess relationships among knowledge, cultural attitudes, and intentions.
- **Chi-square tests** and **ANOVA** were applied to determine associations between demographic variables and outcome measures.
- A **p-value of <0.05** was considered statistically significant.

Results

A total of 105 nurses participated in the study. The majority of participants were between 20 and 39 years old, with a notable predominance of female nurses. Most held a diploma or bachelor's degree in nursing, and the average years of experience in the field ranged from 1 to over 10 years. A considerable number of respondents had specific experience working in obstetrics and gynecology units, which was later found to be significantly associated with higher knowledge scores.

Regarding nurses' knowledge about cervical cancer, the findings revealed a moderate overall level of knowledge. Most participants were aware of the general symptoms of cervical cancer, with 78.1% correctly identifying HPV vaccination as a method of prevention. However, only 35.2% correctly recognized HPV infection as the primary cause of cervical cancer. Furthermore, 43.8% were knowledgeable about risk factors such as sexually transmitted infections. These results indicate that while basic awareness exists, significant knowledge gaps remain, particularly in understanding the role of HPV and the importance of regular screening.

With regard to cultural attitudes, the study revealed that negative attitudes were dominant. Many nurses expressed concerns related to social stigma, religious sensitivities, and perceived discomfort when discussing topics related to reproductive health. These cultural barriers were seen as a significant obstacle in initiating conversations about screening or vaccination with patients. Nurses often cited community disapproval and embarrassment associated with cervical examinations, which discouraged both patients and providers from taking proactive preventive measures.

Despite these barriers, a considerable proportion of participants demonstrated positive behavioral intentions. About 42.9% of nurses expressed a willingness to educate patients about cervical cancer prevention, and 41.9% stated that they intended to promote HPV vaccination in their clinical practice. These intentions suggest that although cultural barriers exist, nurses are still inclined to participate in preventive activities when supported by proper training and institutional encouragement.

The analysis of barriers to cervical cancer prevention further emphasized these challenges. The most commonly reported barriers included lack of awareness (60%), financial constraints (70.5%), and cultural or religious beliefs (62.8%). These barriers significantly influenced both nurses' intentions and their perceived ability to engage in prevention efforts.

Statistical analysis revealed no significant associations between most demographic variables (such as age, gender, and education level) and nurses' knowledge or attitudes. However, there was a statistically significant relationship between years of experience in the obstetrics and

gynecology department and the level of knowledge about cervical cancer prevention ($p = 0.005$). This finding highlights the importance of clinical exposure in shaping awareness and competence in preventive practices.

Overall, the results underscore a disconnect between moderate knowledge levels, negative cultural attitudes, and modest intentions to participate in cervical cancer prevention. These findings align with the constructs of the Theory of Reasoned Action, suggesting that improving both personal beliefs and perceived social norms through education and cultural sensitivity training could enhance nurses' engagement in cervical cancer prevention efforts in Iraq.

Table 1: Demographic Characteristics of Study Participants (n = 105)

Variable	Frequency (n)	Percentage (%)
Age Group		
20–29 years	48	45.7
30–39 years	37	35.2
≥40 years	20	19.1
Gender		
Female	79	75.2
Male	26	24.8
Educational Level		
Diploma	55	52.4
Bachelor's Degree	43	41.0
Higher Education (MSc)	7	6.6
Years of Experience		
1–5 years	36	34.3
6–10 years	41	39.0
>10 years	28	26.7
Experience in OBGYN Unit		
Yes	59	56.2
No	46	43.8

Table 2: Nurses' Knowledge of Cervical Cancer (n = 105)

Knowledge Item	Correct Responses (n)	Percentage (%)
HPV is the primary cause of cervical cancer	37	35.2
Cervical cancer can be prevented by HPV vaccination	82	78.1
STIs increase the risk of cervical cancer	46	43.8
Pap smear is a screening tool	71	67.6
Cervical cancer can be asymptomatic in early stages	64	61.0

Table 3: Cultural Attitudes Toward Cervical Cancer Prevention

Statement	Agree (n)	Percentage (%)
Discussing cervical cancer is taboo in my community	61	58.1
Cultural beliefs hinder women from undergoing screening	66	62.8
It is uncomfortable to talk about HPV with patients	63	60.0
Nurses should respect patients' beliefs even if they reject prevention	77	73.3

Table 4: Nurses' Behavioral Intentions Toward Prevention

Statement	Agree (n)	Percentage (%)
I intend to educate patients about cervical cancer prevention	45	42.9
I intend to promote HPV vaccination in my clinical practice	44	41.9
I feel confident initiating conversations about cervical health	38	36.2

Table 5: Reported Barriers to Cervical Cancer Prevention

Barrier	Frequency (n)	Percentage (%)
Lack of awareness	63	60.0
Financial constraints	74	70.5
Cultural and religious beliefs	66	62.8
Lack of training for nurses	58	55.2

Table 6: Association Between Experience in OBGYN and Knowledge Level

Variable	p-value
Years of experience in OBGYN unit	0.005*

*Significant at $p < 0.05$

Discussion

This study aimed to assess the knowledge, cultural attitudes, and behavioral intentions of nurses regarding cervical cancer prevention in Mosul, Iraq, through the lens of the Theory of Reasoned Action (TRA). The findings reveal a complex interplay of moderate knowledge, negative cultural attitudes, and hesitant behavioral intentions among nurses, highlighting both opportunities and challenges in enhancing preventive healthcare delivery in Iraq.

The analysis of nurses' knowledge revealed that while the majority were aware of cervical cancer symptoms and general screening practices, substantial gaps existed in understanding the role of HPV as a primary causative agent. Only 35.2% of nurses correctly identified HPV as the leading cause of cervical cancer, aligning with similar studies conducted in other low-resource settings, such as Ghana, Nigeria, and Nepal, where knowledge about HPV and its vaccine remains low among healthcare professionals (Keren & Faldu, 2024; Jain et al., 2016; Selasi et al., 2023). In contrast, 78.1% of the nurses in this study were aware of the HPV vaccine, which is promising but not sufficient in the absence of deeper understanding and consistent implementation strategies.

Cultural attitudes played a significant role in shaping nurses' behaviors and intentions. More than half of the participants reported that discussing cervical cancer or reproductive health with patients was uncomfortable or socially taboo. This is consistent with previous findings that cultural and religious sensitivities in Middle Eastern societies often inhibit open discussions about female reproductive health (Ind, 2021; Guliashvili et al., 2024). Such beliefs contribute to the stigma surrounding gynecological examinations and discourage women from seeking preventive care. This cultural barrier also extends to nurses themselves, who may hesitate to initiate patient education due to fear of social judgment or non-acceptance.

Despite the presence of these barriers, a notable portion of participants expressed willingness to educate patients and advocate for vaccination—42.9% and 41.9%, respectively. These findings support the core assumptions of the **Theory of Reasoned**

Action, which posits that an individual's behavior is primarily determined by their intention, which in turn is shaped by attitudes and perceived social norms (Lau et al., 2023; Ng, 2020). The moderate behavioral intentions observed in this study suggest that if nurses' knowledge and attitudes are improved, their intentions to engage in cervical cancer prevention may also strengthen.

A significant finding was the relationship between experience in obstetrics and gynecology (OBGYN) departments and higher knowledge levels ($p = 0.005$). This aligns with studies showing that specialized clinical exposure enhances understanding of disease prevention and patient education (Obaid et al., 2023). Nurses working in maternal health are more likely to encounter cases related to cervical cancer, thus gaining practical insights and motivation to educate others.

Barriers to prevention such as lack of awareness, financial limitations, and cultural constraints were commonly reported. These reflect the broader systemic challenges in Iraq's healthcare system, which is still recovering from years of conflict and resource scarcity (Ahmed et al., 2024). National screening programs are underdeveloped, and HPV vaccines are not widely accessible, further complicating efforts to control cervical cancer.

Overall, the results point to a pressing need for targeted interventions at both institutional and policy levels. These should include **nursing education programs, community-based awareness campaigns**, and culturally sensitive strategies aimed at breaking the silence around cervical cancer. Nurses should be empowered through training that not only enhances clinical knowledge but also equips them to overcome cultural barriers and lead prevention initiatives confidently.

Conclusion

This study explored the knowledge, cultural attitudes, and behavioral intentions of nurses in Mosul, Iraq, regarding cervical cancer prevention using the Theory of Reasoned Action (TRA) as a guiding framework. The findings revealed that while nurses possessed a moderate level of knowledge about cervical cancer symptoms and general prevention

strategies, significant gaps remained—particularly concerning the role of human papillomavirus (HPV) as a primary cause of cervical cancer.

Cultural and religious beliefs were found to strongly influence nurses' attitudes, contributing to discomfort and hesitation in discussing cervical cancer and preventive measures with patients. Despite these cultural constraints, a notable proportion of nurses expressed an intention to participate in cervical cancer prevention efforts through patient education and advocacy, indicating a potential for improvement if adequately supported by institutional and policy-level interventions.

The study also identified a significant association between nurses' clinical experience in obstetrics and gynecology and higher knowledge levels, suggesting that targeted experience and professional exposure may enhance competence in preventive health practices.

Conflict of interest

I declare that there are NO conflicts of interest

Acknowledgment

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Institutional Review Board Statement

Ethical approval was obtained from the **College of Nursing, University of Mosul** (Code: CCMRE-Nur-24-5). Administrative permission was secured from the Nineveh Directorate of Health (**Approval No. 34**). All participants signed informed consent forms after being informed of the study objectives, confidentiality policies, and their right to withdraw at any time without repercussions.

Data privacy and participant confidentiality were maintained throughout the study. Identifiable information was anonymized and securely stored, accessible only to the research team for analysis.

Informed Consent Statement: Not applicable.

Data Availability Statement: Available from the corresponding author upon reasonable request.

References

- Abu-Rustum, N. R., Yashar, C. M., Bean, S., Bradley, K., Campos, S. M., Chon, H. S., ... & Zivanovic, O. (2023). **Cervical cancer, version 1.2023, NCCN clinical practice guidelines in oncology.** *Journal of the National Comprehensive Cancer Network*, 21(1), 1-26. <https://doi.org/10.6004/jnccn.2023.0001>
- Ahmed, A. M., Mohammed, H. A., & Ali, S. F. (2024). **Challenges to women's health promotion in post-conflict Iraq: A qualitative review.** *Eastern Mediterranean Health Journal*, 30(2), 128–134.
- Buskwofie, A., David-West, G., Clare, C. A., & Anyaegbunam, A. (2020). **Cervical cancer screening and prevention in low-resource settings.** *Clinical Medicine Insights: Reproductive Health*, 14, 1–7. <https://doi.org/10.1177/1179558120978493>
- Guliashvili, T., Chikovani, I., & Tsintsadze, M. (2024). **Cultural beliefs and screening behavior among nurses in conservative societies: Implications for HPV prevention.** *Global Public Health*, 19(1), 78–85.
- Ind, T. (2021). **Barriers to cervical cancer screening in conservative cultural environments: A review.** *International Journal of Women's Health*, 13, 489–495.
- Jain, N., Neeraj, K., & Kumar, S. (2016). **Assessment of knowledge and attitude of nurses regarding cervical cancer and its prevention in a tertiary care hospital.** *Journal of Nursing and Health Science*, 5(2), 11–15.
- Kasim, M. (2023). **Preventive health behavior among Iraqi women: The case of cervical cancer screening.** *Baghdad Medical Journal*, 65(1), 24–30.
- Karena, P., & Faldu, D. (2024). **Evaluation of nurses' awareness of HPV and cervical cancer prevention.** *Asian Pacific Journal of Cancer Prevention*, 25(1), 50–56.
- Lau, M. Y., Lau, S. C., & Luk, K. C. (2023). **Applying the Theory of Reasoned Action to predict preventive health behavior among nurses.** *Journal of Health Psychology*, 28(5), 665–678. <https://doi.org/10.1177/13591053221085443>

- Ng, S. H. (2020). **Attitude and intention toward HPV vaccination: A TRA-based study in healthcare workers.** *International Journal of Behavioral Medicine*, 27(3), 304–310.
- Nguyen, M. T., Dinh, T. H., & Vo, T. T. (2023). **Global burden of cervical cancer and prevention strategies: A focus on developing countries.** *BMC Women's Health*, 23(1), 121. <https://doi.org/10.1186/s12905-023-02232-5>
- Obaid, H. M., Rasheed, R. A., & Alwan, A. F. (2023). **The status of HPV awareness and vaccination in Iraq: Current challenges and future opportunities.** *Iraqi Journal of Community Medicine*, 36(2), 101–108.
- Selasi, M. T., Kwami, F. O., & Mensah, A. (2023). **Nurses' knowledge and attitude toward cervical cancer prevention in Ghanaian hospitals.** *African Journal of Reproductive Health*, 27(3), 78–86.
- Sharp, L., Bailey, C., & Eccles, B. (2024). **The role of nurses in cervical cancer prevention: A global perspective.** *Cancer Nursing*, 47(1), e50–e56. <https://doi.org/10.1097/NCC.0000000000001003>
- Williamson, D. (2023). **HPV and cervical cancer: What every health professional should know.** *Lancet Oncology*, 24(4), e158–e159.