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The Role of Health Motivation in Enhancing Adherence to Cervical Cancer Screening Among Female Staff at the University of Kerbala

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ABSTRACT

Background: To highlights the importance of understanding how health motivation influences the adherence to cervical cancer screening among female staff at the University of Kerbala. The aim of this study is to examine the role of health motivation in enhancing adherence to cervical cancer screening among female staff at the University of Kerbala. Methods: A cross-sectional descriptive-analytical study design was conducted among 285 female staff at Kerbala University, Iraq. Participants aged 20-65 years, using simple random sample to choose the participants. Data were collected using the validated scale of the Health Motivation, based on the Health Belief Model (HBM), was used in this study to assess the role of health motivation in adherence to cervical cancer prevention strategies and scale from previous studies to assess the adherence to preventive screening. Demographic data were also collected. Results: increase health motivation is associated with a probability increase cervical cancer its adherence to preventive screening (R2= 0.033).In contrast, adherence to preventive screening is primarily moderate (57.2%), with a mean score of 15.97±3.113. High adherence is seen in 20.7% of respondents, while 22.1% show low adherence. Conclusions: The significant role of health motivation in shaping attitudes and behaviors towards cervical cancer prevention suggests that interventions targeting motivation can have a substantial impact on health outcomes.

Keywords: : Health Motivation, Adherence, Cervical Cancer Screening, Female University Staff

1. Introduction

Health motivation is a crucial psychological concept[1].The HBM was created by social psychologists at the U.S. Public Health Service in the 1950s to explain why people choose to embrace or not adopt preventative health behaviours[2]. A theoretical framework for directing initiatives for illness prevention and health promotion is the Health Belief Model [3] . Individual changes in health-related behaviours are explained and predicted using it[4]

HBM for cervical cancer and the pap smear test assess the following: perceived seriousness of cervical cancer (the degree of a health issue as judged by the individual), benefits of pap smear tests and health motivation (actions taken to prevent disease or deal with an illness), barriers to pap smear testing (ability to inhibit factors such as the cost of operation and overcome pain), and health motivation (a generalised state of intent that results in behaviour designed to maintain or improve health)[5].According to WHO guidelines, screening is useful even once in a lifetime, and the frequency of screenings may vary depending on infrastructure and resource availability[6]. Decisions regarding target ages and screening frequency are left to national decision-makers and are based on infrastructure, costs, and the local burden of disease[7]. The World Health Organisation recommends HPV immunisation for girls between the ages of 9 and 13 before they begin engaging in sexual activity[8]. Screening for cervical cancer saves lives. Cervical cancer rarely develops in those who get regular cervical cancer screenings[9]. Early detection of cervical abnormalities through screening can reduce a person's risk of dying from cervical cancer[10].Taking care on all fronts is needed to motivate people to do early screening for cervical cancer in order to help prevent the high incidence of death and morbidity of patients with cancer when it is discovered at an advanced stage[11]. The Pap smear and the human papillomavirus (HPV) test are two of the most widely used approaches for cervical cancer screening[12]. Previous Iraqi research have focused on the significance of raising knowledge of the preventative measures to manage cervical intraepithelial neoplastic (CIN) illness and the value of encouraging Pap tests to diagnose CIN lesions in Iraqi women[13]. Increasing the use of screening programs requires knowledge and comprehension of cervical cancer and preventative screening for it[14].Higher cancer screening rates, proper follow-up of bad screening tests, and improvements in therapy are some of the reasons for the decades-long drop in cancer mortality rates[15,16] Reproductive-age women's motivation is shaped by predisposition, enabling factors, and reinforcing variables, all of which influence awareness and the decision to undergo early detection[17]. Extrinsic and intrinsic motivational factors are among the many that impact patient behaviour[18].

Material and Methods

Study Design and Sitting

This study used a cross-sectional descriptive-analytical study design to examine the role of health motivation in enhancing adherence to cervical cancer screening among female staff at the University of Kerbala. This design was chosen to capture the prevalence of the relationship between the two variables at a specific point in time conducted at the University of Kerbala.

Study sample The study was conducted at the University of Kerbala, located in Kerbala , Iraq. The target population consisted of female staff at the university. The sample included 285 female staff who were selected through simple random sample. The inclusion Criteria include: Female staff aged 20–65 years and No prior diagnosis of cervical cancer or hysterectomy. Exclusion Criteria includeWomen who declined to participate or submitted incomplete questionnaires**.**

Study tools: Two validated tools were used for data collection scale of the Health Motivation , based on the Health Belief Model (HBM) [19]and scale from privous studies to asses the adherence to preventive screening[20].A demographic questionnaire was also administered to collect data on age, marital status, education level, smoking status , awareness of the human papillomavirus vaccine, source of information about the pap test. The tools were pre-tested on a small sample to ensure clarity and reliability in the target population.

Data collection: Data were collected through self-report questionnaire to examen the role of health motivation in enhancing adherence to cervical cancer screening among female staff at the University of Karbala. Before distributing the questionnaires, participants were informed about the purpose of the study, and written consent was obtained.

Statistical analysis: Data were analyzed using SPSS software version 26. Descriptive statistics, such as means, frequencies, and percentages, were used to summarize demographic characteristics, cervical cancer literacy and adherence to preventive screening. The relationship between cervical cancer literacy and adherence to preventive screening among female university staff severity was assessed using Pearson's correlation coefficient and simple linear regression analysis. The significance level was set at $p < 0.05$ for all statistical tests.

Results :

Table (1)Distribution of Study Sample by their Socio-demographic Variables (SDVs)

SDVs	Classification	No.	%
Age	20-29	111	38.9
	30-39	104	36.5
	40-49	43	15.1
	≥50	27	9.5
	$M \pm SD$	34.05±9.925	
Education level	Intermediate school	3	1.1
	High school	15	5.3
	Bachelor's degree	184	64.6
	Master's degree	67	23.5
	PhD	16	5.6
Marital status	Single	81	28.4
	Married	189	66.3
	Divorced	13	4.6
	Widowed	2	.7

Smoking status	No	281	1.4
	Yes	4	98.6
Have you ever heard of the human papillomavirus vaccine	Yes	129	45.3
	No	156	54.7
Source of the information about the Pap test	Media	33	11.6
	Internet	96	33.7
	Specialist Doctors	118	41.4
	Friends and Family	38	13.3

No. Number; %= Percentage; M= Mean; SD= standard deviation

The study sample consists primarily of individuals aged 20-39 years (75.4%), with an average age of 34.05 years. Most participants have a Bachelor's degree (64.6%), followed by Master's degree holders (23.5%). The majority are married (66.3%), with a small proportion being single (28.4%). Nearly all participants do not smoke (98.6%), and 54.7% are unaware of the HPV vaccine. The primary source of information about the Pap test comes from specialist doctors (41.4%), followed by the internet (33.7%).

Table 2.Predicted Role of Health Motivation in Adherence to Preventive Screening

Variables	Unstandardized Coefficients		Standardized Coefficients	T	*Sig.*
	B	Std. Error	Beta		
Adherence to Preventive Screening	.048	.015	.183	3.129	.002

Dependent Variable: Adherence to Preventive Screening

Independent Variables: Health Motivation

The results of the simple linear regression test indicate that the health motivation among university female staff can serve as a predictors of their adherence to preventive screening ($\beta = 0.183$; $p = 0.002$).

The results depicted in Figure (1) demonstrates that an increase health motivation is associated with a probability increase cervical cancer its adherence to preventive screening ($R^2 = 0.033$).

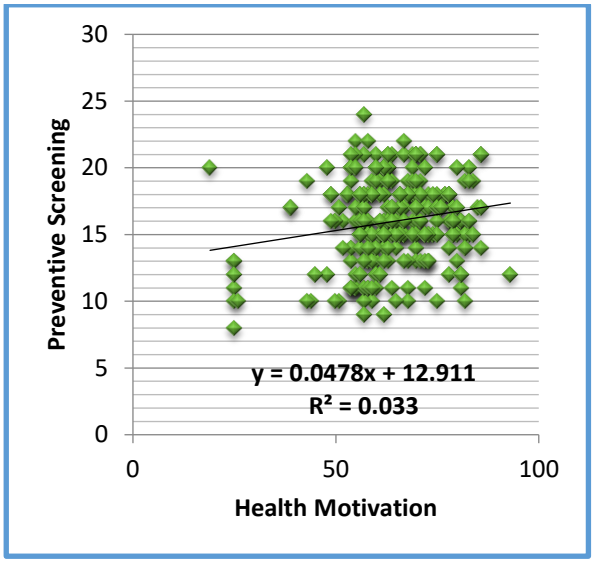

Fig. 1. Health Motivation & Cervical cancer Preventive Screening

Table 3.Relationship between Age of University Female Staff and Study Variables

Correlations	1	2	3	4
1. Age	1			
3. Preventive Screening	.076	.260**	1	
4. Health Motivation	.136*	.330**	.183**	1

**. Correlation is significant at the 0.05 level (2-tailed).*
***. Correlation is significant at the 0.01 level (2-tailed).*

The table shows that there were significant positive correlation between health motivation and university female staff age (*r=0.136,]]p<0.05*), indicating that health motivation slightly increases with age (Fig.2). However, age does not have significant correlations with cervical cancer literacy (*r=-0.091*) or adherence to preventive screening (*r=0.076*).

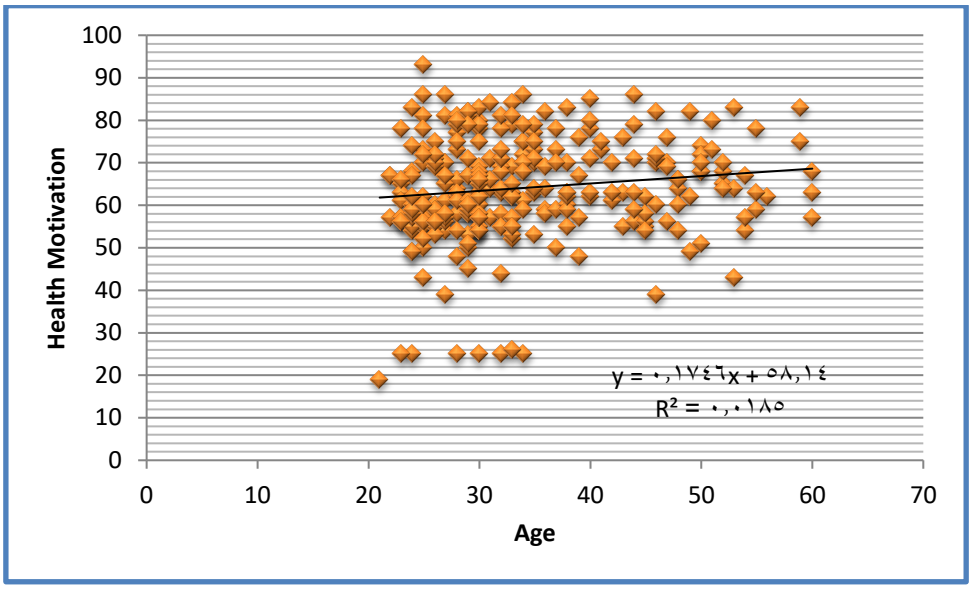

Fig. 2.University Female Staff Age and their Health Motivation

Table 4 .Statistical Differences In Adherence to Preventive Screening, and Health Motivation between Groups of Education Level

Variables	Ranks			$^{b}\chi^2$	Sig.
	Education level	No.	Mean Rank		
Adherence to preventive screening	Intermediate school	3	221.67	8.475	.067
	High school	15	171.93		
	Bachelor's degree	184	137.03		
	Master's degree	67	155.30		
	PhD	16	118.31		
Health motivation	Intermediate school	3	111.17	8.834	.065
	High school	15	110.27		
	Bachelor's degree	184	137.50		
	Master's degree	67	165.76		
	PhD	16	147.56		

^{b}= Kruskal Wallis Test; n= number,; sig.= significant level at ≤0.05.

The Kruskal-Wallis test indicates no statistically significant differences in cervical cancer literacy ($\chi^2=4.634, p=0.327$), adherence to preventive screening ($\chi^2=8.475, p=0.067$), or health motivation ($\chi^2=8.834, p=0.065$) across different education levels among university female staff.

Table 4-8.Statistical Differences in Cervical Cancer Literacy, its Adherence to Preventive Screening, and Health Motivation between Groups of Marital Status

Variables	Ranks			$^b\chi^2$	Sig.
	Marital status	No.	Mean Rank		
Cervical cancer literacy	Single	81	137.91	.606	.895
	Married	189	145.60		
	Divorced	13	139.58		
	Widowed	2	126.00		
Adherence to preventive screening	Single	81	108.38	20.272	.001
	Married	189	157.04		
	Divorced	13	154.81		
	Widowed	2	141.00		
Health motivation	Single	81	139.86	2.791	.425
	Married	189	142.65		
	Divorced	13	153.62		
	Widowed	2	234.25		

^{b}= Kruskal Wallis Test; n= number,; sig.= significant level at ≤0.05.

The Kruskal-Wallis test shows no significant differences in health motivation ($\chi^2=2.791, p=0.425$) based on marital status. However, adherence to preventive screening significantly varies ($\chi^2=20.272, p=0.001$), with married female exhibiting the highest adherence.

Table 5 .Statistical Differences in Adherence to Preventive Screening, and Health Motivation between Groups of Smoking Status

Variable	Smoking Status	No.	Mean Rank	*cz* _	*Sig.*
Adherence to preventive screening	No	281	143.50	420.500	.385
	Yes	4	107.63		
Health motivation	No	281	143.33	470.000	.574

	Yes	4	120.00		

[c]= Mann-Whitney Test; No.= number,; sig.= significant level at 0.05.

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The Mann-Whitney test reveals no significant differences in cervical cancer literacy (*p=0.084*), adherence to preventive screening (*p=0.385*), or health motivation (*p=0.574*) between smoking and non-smoking groups.

Table 6 .Statistical Differences in Adherence to Preventive Screening, and Health Motivation between Groups of Having Information of HPV Vaccine

Variable	Information of HPV	No.	Mean Rank	*cz* _	*Sig.*
Adherence to preventive screening	Yes	129	151.98	8755.500	.073
	No	156	135.58		
Health motivation	Yes	129	150.81	9047.000	.174
	No	156	136.54		

[c]= Mann-Whitney Test; No.= number,; sig.= significant level at 0.05.

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The Mann-Whitney test shows no significant differences were found in adherence to preventive screening (*p=0.073*) or health motivation (*p=0.174*) based on HPV vaccine information.

Table 7 .Statistical Differences in Adherence to Preventive Screening, and Health Motivation between Groups of Sources of Information of Pap test

Variables	Ranks			[b]χ^2	Sig.
	Sources	No.	Mean Rank		
Adherence to preventive screening	Media	33	134.02	4.585	.205
	Internet	96	137.58		
	Specialist Doctors	118	154.83		
	Friends and Family	38	127.78		
Health motivation	Media	33	156.82	1.370	.713
	Internet	96	139.21		
	Specialist Doctors	118	144.20		
	Friends and Family	38	136.83		

[b]= Kruskal Wallis Test; n= number,; sig.= significant level at ≤0.05.

The Kruskal-Wallis test indicates no significant differences were found in adherence to preventive screening ($\chi^2=4.585, p=0.205$) or health motivation ($\chi^2=1.370, p=0.713$) across the different sources of information.

Discussion

Pap smears and HPV testing are examples of preventive screenings that have been shown to lower the incidence and mortality of cervical cancer, which is still a major global health concern. However, adherence to these preventive measures is not at its best, frequently because of misunderstandings and a lack of knowledge about the disease.According to the study's findings, 57.2% of participants were found to have a generally moderate level of adherence to preventive screening. The average adherence score of 15.97±3.113 indicates a significant range in the population. High adherence was reported in 20.7% of respondents, demonstrating that only a small fraction of persons are fully devoted to preventive screening. Meanwhile, 22.1% of the respondents indicated low adherence, indicating a gap in compliance with suggested screening practices.These findings are less than the adherence rates found in comparable research carried out in industrialised nations. For example, a study carried out in the United States revealed that a greater awareness and accessibility to healthcare services were reflected in the better adherence rate to preventative screening programs [21,22]. In a similar vein, Swedish studies revealed adherence rates of up to 78%, which could be explained by strong healthcare regulations and frequent public health initiatives [23]. On the other hand, this study's outcomes are better than those found in other low-income environments. According to a study done in Ethiopia, cultural hurdles and inadequate access to healthcare were the main reasons why just 42% of people followed preventative screening recommendations [24]. Similar to this, adherence rates in India's rural areas were as low as 35%, indicating notable differences in healthcare use [25]. These variations highlight how socioeconomic and cultural factors impact health behaviours and how individualised treatments are necessary to increase adherence. Although the current study's adherence rate shows a modest level of engagement in preventative screening, it falls short of high-income nations where adherence is higher. It is, nevertheless, comparatively better than certain low-income nations, underscoring both the advancements that have been made and the room for more through focused interventions and better public health strategies.Health motivation among university female staff is a significant predictor of their adherence to preventive cervical cancer screening, according to the results of the simple linear regression test. Specifically, ($\beta=0.183$; $p=0.002$) show a statistically significant relationship, confirming that higher levels of health motivation are linked to increased

adherence to cervical cancer screening protocols. The modest R2 value of 0.033 suggests that health motivation accounts for 3.3% of the variance in adherence to screening behaviours, which may seem limited but is consistent with the multifactorial nature of health behaviour, which is influenced by diverse psychological, social, and environmental factors.The found association is consistent with the Health Belief Model (HBM), which holds that a person's perceived vulnerability, the severity of the disease, the advantages of taking action, and their sense of self-efficacy are what motivate them to adopt preventive health behaviours. A key element of this concept, health motivation is essential for encouraging constructive health-seeking behaviours. This conclusion is supported by earlier research; for example, a study by [26] showed that middle-aged women's cervical cancer screening rates were much higher when they had greater levels of health motivation. Likewise, a study by [27] discovered that interventions that improved health motivation led to improved cancer screening program adherence.Furthermore, the significant correlation between health motivation and cervical cancer screening adherence highlights the significance of motivating and educational tactics in public health campaigns. Given their educational backgrounds, female university employees might already be familiar with the basics of cervical cancer. On the other hand, internal motivation might serve as a stimulant to convert information into action. The results of a study by [28] that showed that focused motivational interventions were successful in boosting the adoption of preventive health measures among educated women are corroborated by this finding.Additionally, the comparatively low R2 value encourages more research into additional variables affecting cervical cancer screening adherence. In order to influence screening behaviours, factors like perceived barriers, social support, cultural views, and access to healthcare services may interact with health motivation. This aligns with the results of [29,30], who found that although motivation was a crucial predictor, its impact on health behaviours was frequently mitigated by structural and systemic constraints. When developing interventions to encourage cervical cancer screening adherence, the findings highlight the importance of giving health motivation top priority. Future studies should examine how motivation interacts with other factors and evaluate how motivating techniques affect persistent screening behaviours over the long run. Public health professionals can improve the efficacy of cervical cancer prevention programs among female university employees and other comparable populations by incorporating these findings into frameworks for health promotion.

Conclusions

The study advocates for the integration of health motivation strategies into cervical cancer prevention efforts, particularly focusing on educational outreach and tailored interventions that cater to different demographic groups. By addressing the factors that influence adherence, such as marital status and knowledge of preventive measures like the HPV vaccine, public health initiatives can improve cervical cancer screening rates and contribute to better health outcomes.

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