ASSESSMENT OF FEMALE MARRIED STAFF HEALTH LITERACY TOWARDS REPRODUCTIVE HEALTH BEHAVIOUR AT THE UNIVERSITY OF IBADAN, NIGERIA

Taiwo Oluwaseyifunmi Olunubi [*1], Udukhomose Suleiman Omokhabi Ph.D[*2], Abiola Adiat Omokhabi Ph.D[*1] Mofoluke Abidemi Omilani Ph.D[*1]

*[*1]Department of Adult Education, Faculty of Education, University of Ibadan, Ibadan, Oyo State, Nigeria [*2] Department of Adult Education, Faculty of Education, Federal University Oye Ekiti, Ekiti State, Nigeria*

Correspondence: adiatomokhabi@gmail.com

Abstract

Health literacy is a potent factor that determines several health-related variables including reproductive health. The study assessed health literacy and its relationship with reproductive health behaviour among female staff at the University of Ibadan, Nigeria. The cross-sectional study was performed in 2024 on 185 female staff of the University of Ibadan aged between 19 to 49 years who had been selected through a stratified and random sampling technique from among those with the criteria for entering the study. Two adapted instruments labelled Health Literacy (α=0.79) and Reproductive Health Behaviour Questionnaires (α=0.81) were used for data collection and analysed using frequency counts, percentages and Pearson Product Moment Correlation at a significant level of less than 0.05. The study found that the average mean health literacy of female employees at the University was high ($\bar{x}$=3.89., there is a significant relationship between health literacy and reproductive health behaviour among female staff at the University(r=.504 p<0.05). According to the correlation analysis, the number of children (r = .439, p< .05), income status (r = .630, p< .05), age (r = .633, p< .05), educational attainment (r = .648, p< .05), job description (r = .657, p< .05), were found to be predictors of health literacy, respectively. Female staff at the university have high health literacy and exhibit good reproductive health practices. Therefore, enlightenment programmes regarding good reproductive health practices should be made readily available at University Health Services, health information on reproductive health must be provided on various platforms accessible to all female staff and factors such as age, educational level, income, number of children and job description should be considered when planning initiatives to increase health literacy in women.

Key words: *Health Literacy; Reproductive Health Behaviour; Female Married Staff; University.*

Introduction

Women are considered one of the vulnerable groups in their communities, as their maternal physiology exposes them to various risks and diseases (Ayaz-Alkaya & Ozturk, 2021). Although they are seen as agents of development, women often face challenges, including limited access to credit, healthcare, and education (Omokhabi & Fajimi, 2023). Promoting and ensuring women's health, particularly reproductive health, is a fundamental component of development (Omokhabi, 2016). The World Health Organization (WHO, 2019) states that reproductive health encompasses sexual health and represents a state of complete physical, mental, and social well-being in all matters related to the reproductive system. The UN recognises reproductive health as a crucial component of overall health and well-being at all stages of life and as a prerequisite for social, economic, and human development (Akanbi et al., 2024).

Reproductive health encompasses family planning, sexual health, and maternal health. These areas require women to be physically and mentally healthy to engage effectively in these health activities. Key aspects of women's reproductive health include menarche, menstruation, fertility, pregnancy and childbirth, gynaecological cancers, sexually transmitted infections, sexuality, and sexual health and function (Omokhabi, 2024). For women to enjoy a fulfilling and safe sexual life, they must have the ability to reproduce as well as the autonomy to decide whether, when, and how often to do so. This autonomy impacts reproductive processes, functions, and systems at every stage of life (WHO, 2016). The implications of reproductive health extend to women's health, the health of their children and family members, and the socioeconomic development of society. As such, reproductive health has become a significant issue attracting attention from development experts, non-governmental organisations, and governments in both developed and developing nations (WHO, 1995). In promoting and achieving women's health, reproductive health is recognised as one of the essential elements of development (Omokhabi, 2014). Given its importance, the World Health Organization (WHO) has emphasised that for nations to meet sustainable development goals, such as gender equality and improved education levels, reproductive health literacy is crucial (Dabiri *et al.*, 2019).

In recent years, there has been a growing interest in Health Literacy (HL), which refers to the essential health knowledge, skills, and abilities individuals need to access, understand, and use health services effectively. This knowledge enables people to make informed decisions regarding their health (Nutbeam & Lloyd, 2021). For women, health literacy is crucial for their reproductive health, influencing their knowledge, adherence to clinical care plans, and health outcomes for themselves and their children. Health literacy empowers individuals and communities, allowing them to take greater control over their health (Aljassim & Ostini, 2020). This highlights the importance of health literacy in enabling women to engage in health-promoting activities (Moshki et al.,

2018). Without a solid understanding of healthcare information, women may struggle to make informed decisions that lead to positive health outcomes (Safari *et al.,* 2017).

Moreover, health literacy is essential for women to develop cognitive skills and actively participate in health promotion and preventive behaviours (Shieh & Halstead, 2009). Health literacy significantly supports women in engaging with various health-related activities affecting them and their surroundings (Paasche-Orlow & Wolf, 2010). However, health literacy remains a complex issue that affects many women. Low health literacy can hinder their knowledge, compliance with healthcare plans, disease prevention efforts, and overall health outcomes for themselves and their children (Corrarino, 2013; Tehrani *et al.,* 2018). It particularly impacts reproductive health services aimed at women. Access to information about contraception, safe sexual practices, healthy pregnancies, and postpartum care is essential for women to maintain their health and lead productive lives (Kilfoyle *et al*., 2016). In the absence of sufficient health-related knowledge, women may find it challenging to make informed decisions that lead to better health outcomes for themselves and their families. Thus, health literacy is a critical factor that influences a woman's ability to understand, process, and act upon health-related information (Rakhshkhorshid & Sarasiyabi, 2017). Increasing the health literacy rate among women can lead to improved health and reduced rates of illness and mortality (Tehrani *et al*., 2018). Therefore, greater attention should be given to enhancing health literacy among women.

Many individuals struggle to understand or act on health information due to limited health literacy (Fleary & Ettienne, 2019). Existing literature has shown that individuals with poor or low health literacy experience increased rates of hospitalisation (Baker *et al.,* 2002), higher mortality rates (Friis, 2020), more emergency admissions, and increased readmissions within 30 days of hospital discharge (Berkman *et al.,* 2010). They also show poor adherence to prescribed medications (Berkman *et al.,* 2011), lower utilisation of preventive healthcare services (Osborne *et al.,*.2013), and low family planning service usage among women of reproductive age (Kilfoyle et al., 2016). Moreover, a lack of health literacy can lead to complications such as unintended pregnancies, risky sexual behaviours, and sexually transmitted infections (Dabiri *et al.*, 2019).

Several studies have investigated health literacy among different female age groups and in various settings. Research by Needham *et al*. (2010), Gossett *et al.* (2013), Yee and Simon (2014), Rafat *et al*. (2023), and Ghavami *et al.,* (2024) has explored the connections between health literacy and family planning, fertility, sexual behaviour, STIs, cervical cancer screening, pregnancy, and postpartum health. However, in Nigeria, two studies have looked at health literacy levels and the factors predicting them among intra-city commercial drivers in Ibadan, Oyo State (Itasanmi *et al.,* 2020).

Another study examined how health literacy affected knowledge, attitudes, and contraceptive use among Nigerian adults (Itasanmi, Andong & Adelore, 2023). Yet, the relationship between health literacy and reproductive health behaviour among female university staff remains underexplored.

There is a significant gap in the literature regarding health literacy findings specific to the female population, particularly among those working in university settings. This lack of research underscores the necessity of the current study, which aims to fill this gap and enhance the relevance of its findings. The study is guided by four research questions: (1) what is the health literacy level of female staff? (2) What are the reproductive health behaviours of female staff? (3) How do socio-demographic characteristics impact their health literacy? (4) What is the correlation between health literacy and reproductive health behaviour among female staff? These questions will direct the research.

Methodology

The study adopted a descriptive cross-sectional survey research type.The population for the study consisted of all female staff members at the University of Ibadan in 2024, totalling 1,783 individuals. The research was conducted between March and November 2024. A stratified sampling technique was employed to categorise the female population based on job descriptions (academic and non-academic), followed by a simple random sampling method to select 15 percent of the total population, as not all participants fell within the World Health Organisation's (WHO) (1994) stipulated reproductive age. Female staff were randomly selected to take part in a paper-based survey. The inclusion criteria for the study required participants to be female, aged between 19 and 49 years, which aligns with the WHO (1994) definition of reproductive age. Ad hoc staff and unmarried women were excluded from participation. Data were collected using two adapted instruments labelled Health Literacy and Reproductive Health Behaviour Questionnaires. The assessment tool was a single comprehensive questionnaire divided into three sections. Section A gathered socio-demographic data, Section B measured women's health literacy skills, and Section C assessed reproductive health behaviour. The Health Literacy Scale (HLS) was developed by Itasanmi et al. in 2022, comprises 17 questions designed to evaluate a person's ability to assess, comprehend, appraise, and apply health-related knowledge to make informed health decisions. The HLS utilised a 4-point Likert scale, where responses were classified as Strongly Agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D), with weights of 4, 3, 2, and 1 respectively. The Reproductive Health Behaviour Questionnaire, modified from a model developed by Omokhabi in 2014, included 12 items addressing family size, number of children, timing and spacing of children, use of contraceptives to prevent unwanted or unplanned pregnancies, and safe sexual

practices. Responses included yes/no options, with scores calculated separately based on the type of question. The total score for this questionnaire ranged from 0 to 23, with higher scores indicating a better and higher level of reproductive health behaviour. The content validity of the instruments was confirmed by experts in social welfare from the Department of Adult Education and the health unit of the Department of Social Work. To assess reliability, internal consistency (Cronbach's alpha) analysis was conducted, yielding coefficients of $\alpha = 0.79$ for the Health Literacy Scale and $\alpha = 0.81$ for the Reproductive Health Behaviour Questionnaire. Descriptive statistics (frequency counts and percentages) and inferential statistics (Pearson Product Moment Correlation) were utilised to analyse the data, exploring the relationships between socio-demographic variables and health literacy, as well as the relationship between health literacy and reproductive health behavior. The Department of Adult Education provided the necessary ethical clearance. Every female staff member who voluntarily consented to participate in the study did so after reading and agreeing to the terms outlined in the participant consent form. Health literacy levels were evaluated using benchmarks, with a weighted mean of 3.89 and a threshold of 1.55 established for assessing reproductive health behaviour

Health Belief Model (HBM)

Research on the relationship between reproductive health behaviour and health literacy is essential because it shows how people's knowledge and comprehension can have a big influence on their health decisions and results. The Health Belief Model (HBM) is among the most pertinent theories that can explain this connection. The four main cognitive constructs that make up the HBM theoretical framework are perceived barriers to action perceived benefits of behavior change perceived severity of illness and perceived susceptibility to illness (Mandryk Vassilileva & Orji 2012). Psychologists have included self-efficacy in the model as a result of changing research and the recognition of its importance as a crucial component of health behavior decision-making (Bandura 1977). According to HBM people's perceived risk of infection and disease severity (perceived susceptibility and perceived severity) as well as the perceived advantages and disadvantages of the behavioral change (perceived benefits and perceived barriers) all influence their behaviour (Pang *et al.,* 2021; Yao *et al.,* 2021). It was suggested that HL may affect behavioural outcomes by influencing people's beliefs about the health motivation of the outcomes (Tadesse *et al.,*2020) under the Health Belief Model (Champion & Skinner 2008) and the HL Skills Framework (Squiers *et al.,*. 2012). Prior research has substantiated the HBM as a valuable model for forecasting/explaining preventive behavior toward infectious diseases (Shewasinad *et al.,*2021). This model states that an individual's propensity to engage in a healthy activity is determined by their personal beliefs (Walrave Waeterloos & Ponnet 2020).

For example, when women of reproductive age perceive that they are at risk of unintended pregnancies (perceived susceptibility) or that an unintended pregnancy could have a major negative influence on their health (perceived severity) they will adopt health behaviours. In the meantime, HL will have an impact on their perceptions of the efficacy of preventive measures such as the use of family planning techniques (both traditional and modern) (perceived benefits) and the difficulty of specific behaviours (perceived barriers). Enhancing self-efficacy, perceived sensitivity, perceived intensity and perceived benefits, as well as increasing awareness, HL can lower barriers to adopting health behaviours (Panahi *et al.*,,2018 ;Aval, Ansari-Moghadam & Masoudy ,2019). Similar studies such as those by Brega et al. (2021) have employed HBM discovered that more favourable health beliefs were linked to stronger HL (that is perceived benefits and severity as well as fewer perceived obstacles. According to earlier studies HL has an impact on the structures of HBM (Rahman *et al.*, 2018) and this framework offers a helpful way to alter and clarify the effects of HL (Panahi *et al.*,. 2018). Niu and associates (2021) discovered that among Chinese high-risk individuals HBM constructs were linked to both lower levels of preventive behavior engagement. Therefore it's possible that HL shapes the health beliefs of women of reproductive age which in turn may influence health behaviors. A useful model for the study is the Health Belief Model which demonstrates the clear relationship between the variables. Perceived Susceptibility: Women of reproductive ages perception of their risk for reproductive health issues such as STIs or unplanned pregnancies is influenced by their level of health literacy. People who have greater health literacy are more likely to be aware of how vulnerable they are to these dangers. Perceived Severity: It's important to comprehend the possible repercussions of reproductive health problems. Women of reproductive age with better health literacy can obtain and interpret information about the risks and complications associated with poor reproductive health. The benefits of adopting healthy reproductive practices (such as using contraception and getting regular screenings) and overcoming potential obstacles (such as stigma and lack of access) are perceived to be enhanced by health literacy. As people balance the advantages of protective behaviours against any perceived obstacles they may face higher health literacy can help them make proactive health decisions. Cues to Action: When reproductive health information is effectively communicated through educational programs they can act as cues to take action. Understanding these indicators and being able to seek health care or adopt healthier habits are made possible by health literacy for women of reproductive age.

Results

Table 1 presents the socio-demographic characteristics of the respondents revealing the age range of the respondents 15 (8. 1 percent) are between the ages of 19 and 29 and 175 (91. 9 percent) are between the ages of 30 and 49.117 (63. 2 percent) of the respondents are Christians 58 (31. 4 percent) are Muslims and 10 (5. 4 percent) are others. In fact 35 (18. 9 percent) of the respondents hold a bachelor's degree or higher national degree, 31 (16. 8 percent) hold a master's degree ,95 (51. 4 percent) hold a doctorate and 24 (12. 9 percent) are Diploma and NCE holders, 26 (14.1 percent) earn between N50000 and N100000, 51 (27. 5 percent) earn between N101,000 and N150000 ,27 (14. 6 percent) earn between N151,000 and N200000 and 81 (43. 8 percent) earn between N201,000 and above. 133 (71.9 percent) of the respondents are members of monogamous families while 52 (28. 1 percent) are from polygamous households .27 (14. 6 percent) have only one child. 95 (51. 4 percent) have two children, 44 (23. 8 percent) have three children, 17 (9. 2 percent) has four children and 2 (1. 1 percent) have 5 children and above. Of the respondents 54. 1 percent were academic staff while 45. 9 percent were non-educational staff.

Table 1: Socio demographic Characteristics of the Respondents

Age	**19-29**	**15**	**8.1**
	30-49	**175**	**91.9**
Religion	Christianity	117	63.2
	Islam	58	31.4
	Others	10	5.4
Income	N50,000 – N100,000	26	14.1
	N101,000 – 150,000	51	27.5
	N151,000 – 200,000	27	14.6
	N201,000 and above	81	43.8
Highest Education Qualification	Diploma/ NCE	24	12.9
	B.Sc/B.Ed/HND	35	18.9
	ME.d , M.A, MSc	31	16.8
	Ph.D.	95	51.4
Family Structure	Monogamy	133	71.9
	Polygamy	52	28.1
Number of Children	1	27	14.6
	2	95	51.4
	3	44	23.8
	4	17	9.2
	5 and above	2	1.1

Job Status	**Academic**	**100**	**54.1**
	Non -Academic	**85**	**45.9**

Table 2 shows the variations in health literacy levels among female staff at the University of Ibadan. The following items (1, 2, 3, 4, 5, 9, 10, 11, 12, 13, 14, 15, 16, and 17) recorded high scores above the threshold of 3.89. Item 1 revealed that a mean score of 4.02 indicates that respondents agreed they can read and understand written health information, including medication labels. Item 2 showed a score of 3.95, with respondents agreeing that they can accurately fill out medical forms. In addition, Item 3 also scored 3.95, indicating that respondents follow all advice given by medical professionals regarding health issues. Item 4 had a score of 3.89, suggesting that respondents can personally obtain health-related information from various sources. Item 5 scored 3.88, which indicated that the respondents disagreed with the statement that they have no trouble finding information about their health issues.

However, Item 6 scored lower than the threshold at 3.85, showing that respondents agreed they have access to health information from various sources. Similarly, Item 7 scored 3.72, indicating that respondents have limited access to up-to-date medical information needed to manage their reproductive health issues. Item 8, with a score of 3.72, revealed that respondents disagreed with the statement regarding the ease of comparing health information from multiple sources.

Item 9 had a score of 4.09, indicating that respondents agreed they could verify the accuracy of specific new health information. Item 10 scored 3.98, showing that respondents felt comfortable discussing health concerns with doctors and other healthcare providers. Item 11 had a score of 3.92, affirming that respondents indeed engage in discussions about health concerns with their healthcare providers. Item 12 scored 3.94, suggesting that respondents actively seek necessary health information during discussions with healthcare providers. On the other hand, Item 13 scored 3.76, indicating that respondents disagreed that everyday behaviours affecting their health are easy to recognize. Item 14, with a score of 3.89, revealed that respondents disagreed they could identify activities that might improve their mental health. Item 15 scored 3.90, affirming that respondents believe they can lower their risk of illness by following health tips from various media sources, such as radio, television, and newspapers. Item 16, with a score of 3.90, indicated that respondents are aware of health risks associated with certain behaviours, such as smoking, lack of exercise, and excessive alcohol consumption. Finally, Item 17 scored 3.91, indicating that respondent's feel they can easily access information on better ways to manage stress and depression. Overall, these findings suggest that health literacy is high among female staff at the University of Ibadan.

Table 2: Health Literacy of Female Married Staff

. Items	**SD**	**D**	**A**	**SA**	$\bar{x}$	**SD**
I can read and understand written health information including medication labels	8 4.3%	32 17.3%	119 64.3%	25 13.5%	4.02	2.27
I am capable of accurately filling out medical forms.	5 2.1%	37 20.0%	98 53.0%	46 24.8	3.95	.75
I can follow all guidelines provided by medical professionals regarding any health issue	4 2.1%	32 17.3%	118 63.8%	31 16.8%	3.95	.67
I can personally obtain health-related information from various sources	4 2.7%	40 21.6%	109 58.9%	31 16.8%	3.89	.71
I have no problem finding information concerning my health issues.	4 2.2%	39 21.1%	114 61.6%	28 15.1%	3.88	.70
I have access to health information from various sources	9 4.8%	34 18.4%	117 63.2%	25 13.5%	3.85	.72
I can affirm having access to current medical information that will assist me manage my	12 6.5%	47 25.4%	100 54.1%	26 14.1%	3.72	.88

reproductive health problems.						
Comparing health information from several sources is quite simple.	11 6.0%	46 24.9%	108 58.4	20 10.8%	3.72	.79
I can verify whether particular new health information is correct or not	8 4.3%	46 24.9%	97 52.4%	34 18.3%	4.09	3.86
I can discuss health problems with healthcare providers in a manner they can understand properly	3 1.6%	39 21.1%	101 54.6%	42 22.7%	3.98	.71
I can discuss health concerns with doctors and other healthcare providers	6 3.3%	34 18.4%	110 59.5%	34 18.9%	3.92	.74
I can engage healthcare providers in discussions to get needed health information	3 1.6%	40 21.6%	107 57.8%	35 18.9%	3.94	.68
Everyday behaviours that impact my health are easy to recognise	11 6.0%	48 25.9%	99 53.5%	27 14.6%	3.76	.80
I can look into things to do that can improve my mental health	8 4.3%	37 20.0%	116 62.7%	24 13.0%	3.89	.72
By following health tips from different media sources such as radio, television, and newspapers, I	5 2.7%	51 27.6	102 55.1%	27 14.6%	3.90	.74

can reduce my risk of illness.						
I am aware of the health risks associated with certain behaviours, like smoking, not exercising, and drinking alcohol too much.	7 3.8%	39 21.1%	109 58.9%	30 16.2%	3.90	.75
Information about how to manage stress and depression more effectively is accessible to me.	5 2.7%	35 18.9%	116 62.7%	29 15.7%	3.91	.69
Average Mean				**3.89**		

Table 3 presents the varying levels of reproductive health behaviour among female staff at the University of Ibadan. The following items (1, 3, 4, 5, 6, 7, 9, 10, 11, and 12) recorded scores close to or above the threshold of 1.55. Specifically, 115 respondents (62.2 percent) agreed that they have ever used family planning methods, with a mean score of 1.58. Additionally, 103 respondents (55.7 percent) stated that they have used a family planning method since the birth of their last child, reflected by a mean score of 1.45. Regarding the use of family planning methods to avoid unwanted pregnancies, 58 respondents (31.4 percent) reported using condoms, followed by injectables (39 respondents, 21.1 percent), implants (27 respondents, 14.6 percent), oral contraceptive pills (17 respondents, 9.2 percent), IUDs (16 respondents, 8.6 percent), withdrawal (10 respondents, 5.4 percent), abstinence (9 respondents, 4.9 percent), none/others (5 respondents, 2.7 percent), and traditional methods (3 respondents, 1.6 percent). Among those who have used birth control since their last child, 22 respondents (10.9 percent) reported using an IUD, 20 respondents (10.8 percent) used oral contraceptive pills, 18 respondents (9.7 percent) chose implants, 12 respondents (6.5 percent) used withdrawal, 6 respondents (3.2 percent) practiced abstinence, and both traditional methods and none/others had 4 respondents (2.2 percent each), while female condoms were used by 3 respondents (1.6 percent). According to Item 5, 60 respondents (32.4 percent) stopped using contraceptives due to side effects or health concerns, 48 respondents (25.9 percent) wanted a child, 37 respondents (20.0 percent) indicated that

their partner disapproved, and 22 respondents (11.9 percent) reported family disapproval. Furthermore, 7 respondents (3.8 percent) became pregnant while using birth control, 3 respondents (1.6 percent) found it hard to obtain, and 1 respondent (0.5 percent) couldn't afford it. Item 6 indicates that a mean score of 2.69 reflects that 100 respondents (54.1 percent) discussed contraception with their spouse frequently, while 35 respondents (18.9 percent) did so seldom, 26 respondents (14.1 percent) infrequently, and 24 respondents (13.0 percent) never discussed it. According to Item 7, 84 respondents (45.4 percent) made joint decisions about contraception in their family, while 56 respondents (30.3 percent) stated the respondent makes the decisions, 24 respondents (13.0 percent) said the partner decided, and 21 respondents (11.4 percent) reported not being able to use family planning. Item 8 reveals that a mean score of 1.49 indicates that 94 respondents (50.8 percent) take decisions regarding family size. Item 9, with a mean score of 1.55, shows that 102 respondents (55.1 percent) utilise contraceptives to space their children. Item 10, at a mean score of 1.54, indicates that 100 respondents (54.1 percent) use contraceptives during breastfeeding to avoid getting pregnant immediately. Item 11, with a mean score of 1.56, notes that 50.8 percent agreed that family planning methods facilitate safe sexual relations with their spouse. Lastly, Item 12, also with a mean score of 1.56, shows that 56.2 percent agreed that using contraceptives allows them to take time for conception. Overall, this data suggests that the reproductive health behaviour of female staff at the University of Ibadan is positive, particularly in the areas of utilising family planning methods to avoid unwanted pregnancies, current use of contraceptives, discussing family planning with their spouse, making contraceptive decisions within the family, using contraceptives during breastfeeding to avoid getting pregnant immediately, spacing of children, ensuring safe sexual relations with their spouse, and having time for conception.

Table 3. Reproductive Health Behaviour of female staff

Items	**Yes**	**No**	$\bar{x}$	**SD**
Did you ever used a family planning method?	115 62.2%	70 37.8%	1.58	.50
Did you used a family planning method since your last baby?	103 55.7%	82 44.3%	1.45	.51
To avoid unwanted pregnancy, which method are you using currently to avoid unwanted pregnancy? Choose one	17 (9.2%)			
Oral contraceptive pill	39 (21.1%)			
Injectable	27 (14.6%)		4.45	4.45
Implant	16 (8.6%)			

IUD	58 (31.4%)		
Condom	1 (0.5%)		
Female condom	0 (0.0%)		
Foam/jelly	10 (5.4%)		
Withdrawal	9 (4.9%)		
Abstinence	3 (1.6%)		
Traditional	5 (2.7%)		
None/Others			
Since your last child, which method are you using currently?			
Choose one	20 (10.8%)		
Oral contraceptive pill	35 (18.9%)		
Injectable	18 (9.7%)	4.27	2.42
Implant	22 (11.9%)		
IUD	61 (33.0%)		
Condom	3 (1.6%)		
Female condom	0 (0.0%)		
Foam/jelly	12 (6.5%)		
Withdrawal	6 (3.2%)		
Abstinence	4 (2.2%)		
Traditional	4 (2.2%)		
None/Others			
Why did you stop using contraception?			
Choose one	7 (3.8%)		
I became pregnant while using	48 (25.9%)		
Wanted a child	60 (32.4%)		
Because of side effects/health concerns	37 (20.0%)		
Partner disapproved	22 (11.9%)	3.36	1.46
Family disapproved	3 (1.6%)		
It is hard to get	1 (0.5%)		
I cannot afford it	7 (3.8%)		
None/Never			
How often do you talk with your spouse about contraception?	24 (13.0%)		
Never	35 (18.9%)		
Seldom	26 (14.1%)	2.69	1.47
A few times	100 (54.1%)		
Many times			
Decision about contraception in my family is only taken by			

	56 (30.3%)			
Respondent	24 (13.0%)		2.38	1.04
Partner	84 (45.4%)			
Joint decision	21 (11.4%)			
I can't use family planning				
I take decision as per my family size	94 50.8%	91 49.2%	1.49	.50
I make use of contraceptives to enable me space my children	102 55.1%	83 44.9%	1.55	.50
I use contraceptives during breastfeeding of my baby to avoid getting pregnant immediately	100 54.1%	85 45.9%	1.54	.50
Family planning methods allows me to safe sexual relations with my spouse.	94 50.8%	91 49.2%	1.56	.50
To enable me give time for the conception of my children, I make use of contraceptives	104 56.2%	81 43.8%	1.56	.50
Average Mean 1.55				

To illustrate the relationship between various socio-demographic characteristics and health literacy a zero-order correlation analysis was shown in Table 4. A significant positive correlation between health literacy and age ($r = .633$, $p < .05$), income status ($r = .630$, $p < .05$), educational attainment ($r = .648$, $p < .05$), job description ($r = .657$, $p < .05$), and number of children ($r = .439$, $p < .05$) was found. These results implied that a greater range of age, income, educational attainment, .job description and number of children are associated with better health literacy. Notably no association between religion, family type and health literacy was discovered indicating that these factors might not directly affect respondent's health literacy levels in this case.

Table 4 Zero Order Correlation Showing the Relationship between Health Literacy and Socio-demographic Characteristics of Respondents

	Health literacy	**Age**	**Religion**	**Family type**	**Income status**	**Educational attainment**	**Job description**	**Number of children**
Health literacy	1							
Age	.633 (.060)	1						
Religion	.086 (.244)	.056 (.448)	1					
Family type	-.047 (.523)	.574* (.001)	.067 (.364)	1				
Income status	.630* (.001)	.067 (.368)	.020 (.786)	-.076 (.301)	1			
Educational attainment	.648* (.001)	.029 (.700)	.186* (.011)	-.027 (.716)	.556* (.001)	1		
Job description	.657* (.001)	-.014 (.845)	.121 (.100)	-.021 (.776)	.530* (.001)	.594* (.001)	1	
Number of children	.439* (.001)	.015 (.839)	.003 (.973)	.039 (.597)	.366* (.001)	.317* (.001)	.353* (.001)	1
Mean	54.63	22.61	2.02	267.57	3.36	2.68	2.52	2.58
Std. deviation	**13.00**	**2.59**	**1.03**	**104.40**	**1.20**	**1.05**	**1.12**	**1.42**

The result shows that health literacy and reproductive health behaviour among female married University of Ibadan staff were statistically significantly correlated (r=.504 n=185 p(. 001)< 05). Thus among the study's married female staff health literacy affected or improved reproductive health behaviour. **(Table 5).**

Table 5. Pearson Product Moment Correlation (PPMC) showing the Relationship between Health Literacy and Reproductive Health Behaviour **among Female Married Staff**

Variables	Mean	Std. Dev.	n	R	p-value	Remarks
Health literacy	40.8120	3. 3942	185	.504*	.001	Sig.
Reproductive Health Behaviour	25.0614	3. 6115				

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

Discussion

The study found that female married staff at the University of Ibadan exhibited a high level of health literacy in terms of their capacity to assess, understand, appraise and apply health-related knowledge to make well-informed decisions regarding their reproductive health. This is not surprising as women who work in universities are required to have a minimum level of education before they can be employed for a living and their educational background may influence their knowledge of information related to reproductive health. This is in line with survey findings that indicated women with higher education levels also had higher levels of health literacy (Kohan et al 2018). This may be explained by of 35 (18. 9 percent) of those surveyed have a bachelors degree .31 (16. 8 percent) have a masters degree 95 (51. 4 percent) have a Ph.D. and 24 (12. 9 percent) have a diploma or NCE .Their educational background could be a strong predictor of their health literacy score .One of the social determinants of reproductive health that is crucial for both individuals and communities is health literacy.

In terms of family size , number of children, timing and spacing of children ,use of contraceptives to avoid unwanted or unplanned pregnancies and safe sex relations the study found that female married staff members at the University of Ibadan exhibit good reproductive behaviour. Female employees are generally well-educated. It makes sense that female employee's high levels of education might have given them the confidence to make their own decisions about using birth control and other reproductive health procedures. Reproductive health is crucial for women in addition to their overall health. Women reproductive health includes many facets of good health including sexual relations, well-being, family planning, protection from unfavourable circumstances resources for its promotion and preservation. From a health policy standpoint it is critical to identify the factors that influence womens reproductive health and behaviours (Nketiah-Amponsah, Arthur & Aaron ,2012;Alosaimi *et al.* 2019). All of this is

consistent with studies conducted on female employees in the southwest region of Nigeria that found that these employees exhibited positive reproductive behaviours (Omokhabi, 2014). It also supports a study conducted in a few LGAs in Oyo State Nigeria which found that most respondents knew enough about reproductive health and its various approaches (Olajide & 'Omokhabi 2014). Higher educated women are more likely to acquire positive attitudes and obtain family planning services (Zegeye *et al.* 2021). Women's attitudes toward family planning improve with increasing education (Çalıkoğlu *et al* 2018; Zegeye *et al* ,2021; Jiregna *et al* 2024).Three times as many women with secondary education used family planning techniques as women without any formal education according to one study (Kim *et al*. 2019) which agrees with the findings of this study. The use of contemporary family planning techniques is influenced by women's perceived high economic standing occupation and income-generating job (Kilfoyle *et al.* 2016). This is also supported by a 2020 study by Omokhabi which found that 40.7 percent of respondents agreed that they use the modern family planning method for child spacing which is good and 65 percent of respondents agreed that their partner approves of them using it. .

Health literacy and reproductive health behaviours among married female employees at the University of Ibadan were statistically significantly correlated (r=. 314 n = 185 p<. 001) .Thus health literacy affected or improved reproductive health practices among the study's married female employees. This shows that health literacy has a positive effect on the reproductive health behaviours of study participants. As health literacy rises so do reproductive health decisions and behaviours. This research suggests that raising married womens health literacy can result in a variety of benefits for their physical mental and spiritual well-being. Stated differently married women who are employed at the University of Ibadan and possess greater health literacy may choose healthier habits that will improve their overall health. The present finding is in line with another studs conclusion that the best predictor of adherence to using oral contraceptives is health literacy (Liddelow Mullan & Boyes 2020). In order to reduce fertility and time it as they see fit women who possess greater reproductive health literacy seem to be more knowledgeable about and adept at using family planning techniques. They also use contraceptive methods more frequently than other women. Yadav *et al.* (2020) found that women with a sufficient level of HL use modern family planning methods at a significant rate which supports this finding.

Age($r = .633$, $p < .05$), income status ($r = .630$, $p < .05$), educational attainment ($r = .648$, $p < .05$), job description ($r = .657$, $p < .05$), and number of children ($r = .439$, $p < .05$) are all significantly positively correlated with health literacy according to the findings. It demonstrates that a woman degree of health literacy is greatly influenced by their age, financial situation, education ,number of children and job description. Iranian research also confirmed this finding (Askarian-Tavandar, 2018 ;Ahmadi *et al.*, 2018; Ghaffari.

2018). In another study occupation, income and educational attainment all had an impact on health literacy (Ahi & Çetinkaya 2024). This result is consistent with a study carried out in the Ilu Ababor zone of Oromia Ethiopia which found a significant correlation between maternal health literacy and educational attainment, age and place of residence as well as maternal practice variables like the number of children (Jiregna *et al*. 2024). Previous studies have observed a correlation between health literacy and age, income, occupation and education (Rakhshkhorshid &Sarasiyabi 2017 ; Tehrani *et al.* 2018 ;Huang *et al.* 2020). In line with this study, Huang *et al.* (2020) demonstrated a correlation between low health literacy and the variables of low socioeconomic status, low educational attainment and advancing age in the women's cohort. Age and health literacy were found to be significantly correlated by Rakhshkhorshid and Sarasiyabi (2017) study, as demonstrated in the same study employed women had higher health literacy than housewives or unemployed women and even educated individuals with over 12 years of education lacked adequate health literacy. Tehrani *et al*. (2018) discovered that compared to housewives employed women had higher health literacy and that nearly half of their sample of women lacked sufficient health literacy. According to this body of research womens health literacy rises with income and education levels and falls as they age. Since more educated people are better equipped to find the information they need to address health issues, raising education levels is crucial to improving health literacy levels. Higher employment raises incomes which in turn improves health literacy. To improve women's health literacy they should be taught about it from a young age.

Conclusion

The present study has limitations related to sample size. While the sample size excluded women over 49 and ad hoc staff future research should aim to increase the sample size and include other age groups of women. Additionally the data was gathered solely from scales that were validated and pilot tested which may have left out some aspects of reproductive health behaviour. In conclusion. With an average score of 3. 89 the study concludes that female employees at the University of Ibadan have a comparatively high level of health literacy. Better health literacy may also lead to better reproductive health practices as evidenced by the significant positive correlation that was discovered between health literacy and reproductive health behaviour. Additionally, the study found a strong relationship between health literacy and several socioeconomic and demographic characteristics such as age, income level, educational attainment, number of children and job description. These results highlight how crucial it is to take these aspects into account when creating health literacy programmes. Future studies could look into the underlying causes of these associations in more detail and look into specific tactics to improve health literacy, especially in areas of reproductive health. The conclusion offers insightful information that expands on the knowledge of the

connection between health literacy and other variables affecting the reproductive health behaviours of female University of Ibadan employees. The conclusion assists in identifying the important variables that might contribute to variations in health literacy levels by emphasising the strong positive correlation between health literacy and variables such as age, income, education, job description and number of children. Furthermore, the correlation between reproductive health behaviour and health literacy highlights the significance of health education in promoting healthier habits. The conclusion also provides useful implications for policymakers, healthcare providers and educational institutions by paving the way for additional research into how particular interventions aimed at these factors can enhance health outcomes. .

References

Ahi S, & Çetinkaya F. (2024) The relationship between health literacy and family planning attitude in women in Kırşehir province, Turkey. Afr J Reprod Health. Jun 30; 28(6):95-102. doi: 10.29063/ajrh2024/v28i6.10. PMID: 38984510.

Ahmadi FZ, Mehr-Mohammadi M, Talaee E, Fardanesh H, Paknahad M, Taghizadeh S, et al (2018). Health Lit among students Farhangian Univ Payesh. 2018; 17(3):257–66.

Akanbi F. O., Osu, U.C., Omokhabi A.A. & Omokhabi, U.S. (2024) Factors Influencing Public Healthcare Patronage Among Women Of Reproductive Age In Akinyele Local Government Area In Oyo State, Nigeria Ibadan Journal of Sociology

Aljassim N, & Ostini R. (2020). Health literacy in rural and urban populations: a systematic review. (2020) Patient Education and Counseling 103(10): 2142–2154.

Alosaimi A. N, Nwaru B, Luoto R, Al Serouri AW, & Mouniri H. (2019) Using household socioeconomic indicators to predict the utilization of maternal and child health services among reproductive-aged women in Rural Yemen. *Glob Pediatr Health*. 6:2333794X19868926. doi: 10.1177/2333794X19868926

Askarian-Tavandar P, Hashemian M, Joveini H, Solimanian A, & Rastaghi S. (2018)A Survey on the level of Health literacy among the women in Bardaskan City, Iran, in Year 2016: a cross-sectional study. Health Syst Res.;14(1):35–40.

Aval M, Ansari-Moghadam A, Masoudy G. (2019) Educational intervention based on health belief model on the adoption of preventive behaviors of Crimean-Congo hemorrhagic fever in ranchers. *Health Scope.* 8:e14112. doi: 10.5812/jhealthscope.14112

Ayaz S & Efe SY (2009). Family planning attitudes of women and affecting factors. Journal of the Turkish German Gynecological Association; 10(3): 137–141.

AYAZ-ALKAYA, Sultan & OZTURK, Fatma Ozlem. Health Literacy Levels of Women and Related Factors in Turkey. Journal of Nursing Research 29(6):p e180, December 2021. | DOI: 10.1097/JNR.0000000000000452

Baker DW, Gazmararian JA, Williams MV, et al. (2002)Functional health literacy and the risk of hospital admission among Medicare managed care enrollees. Am J Public Health. 2002;92(8):1278- 1283. doi:10.2105/ajph.92.8.127

Bandura A. (1977) Self-efficacy: toward a unifying theory of behavioral change. Psychol Rev. Mar;84(2):191-215.

Berkman ND, Davis TC, & McCormack L. (2010). Health literacy: what is it? J Health Commun.;15 Suppl 2:9-19. doi:10.1080/1081073 0.2010.499985

Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K (2011). Low health literacy and health outcomes: an updated systematic review. Ann Intern Med.;155(2):97-107. doi:10.7326/0003- 4819-155-2-201107190-00005

Brega AG, Johnson RL, Schmiege SJ, Wilson AR, Jiang L, Albino J. (2021) Pathways through which health literacy is linked to parental oral health behavior in an American Indian tribe. *Annals Behav Med: Pub Soc Behav Med.* 55:1144–55. doi: 10.1093/abm/kaab006

Çalıkoğlu EO, Bilge Yerli E, Kavuncuoğlu D, Yılmaz S, Koşan Z and Aras A. (2018) Use of Family Planning Methods and Influencing Factors Among Women in Erzurum. Medical Science Monitor: International Medical Journal of Experimental and Clinical Research; 24: 5027–5034.

Champion VL, & Skinner CS. (2008). *The Health Belief Model*. San Francisco, CA: Jossey-Bass p. 45–65.

Dabiri F, Hajian S, Ebadi A, Zayeri F, & Abedini S. (2019) Sexual and reproductive health literacy of the youth in Bandar Abbas. AIMS Med Sci. 2019;6(4):318-25. doi: 10.3934/medsci.2019.4.318.

Fleary SA,& Ettienne R (2019) Social disparities in health literacy in the United States. Health Literacy Research and Practice 3(1): e47–e52

Fortenberry JD, McFarlane MM, Hennessy M, et a (2001). Relation of health literacy to gonorrhoea related care. Sex Transm Infect;77:206–211

Friis K, Aaby A, Lasgaard M, Pedersen MH, Osborne RH, Maindal HT. (2020). Low health literacy and mortality in individuals with cardiovascular disease, chronic obstructive pulmonary disease, diabetes, and mental illness: a 6-year

population-based follow- up study. Int J Environ Res Public Health.;17(24):9399. doi:10.3390/ijerph17249399

Ghaffari M, Hatami H, Rakhshandrrou S, Shoghli A, Heidari A(2018).. Health literacy among women referring to Healthcare Centers of Zanjan City, Iran: a cross-sectional study. J Educ Community Health.;5(1):42–8.

Ghavami B, Sohrabi Z, RaisiDehkordi Z, Mohammadi F. (2024). Relationship between reproductive health literacy and components of healthy fertility in women of the reproductive age. J Educ Health Promot. Mar 28;13:105. doi: 10.4103/jehp.jehp_132_23. PMID: 38726088; PMCID: PMC11081442.

Itasanmi, S.A , Ekpenyong V.O , Andong H.A(2022). Examining Health literacy levels and its Association with Demographic Dynamics among Intra-City Commercial Drivers: Results from a Survey in Nigeria. Journal of Health Literacy. Winter; 6(4): 9-21

Itasanmi, S.A Andong, H.A. Adelore. O.O (2023) Impact of Health Literacy on Contraceptive Knowledge, Attitude and Use among the Nigerian Adult Population. Journal of Health Literacy. Summer; 8(2): 25-40.

Jiregna B, Amare M, Dinku M, Nigatu D and Desalegn D (2024). Women Health Literacy and Associated Factors on Women and Child Health Care in Ilu Ababor Public Health Facilities, Ethiopia. International Journal of Women's Health 16: 143–152.doi: 10.2147/IJWH.S443198. PMID: 38292301; PMCID: PMC10826516.

Kilfoyle KA, Vitko M, O'Conor R & Bailey SC (2016). Health Literacy and Women's Reproductive Health: A Systematic Review. Journal of Women's Health 25(12): 1237–1255.

Kim TY, Haider M, Hancock GR and Boudreaux MH. (2019) The Role of Health Literacy in Family Planning Use among Senegalese Women. Journal of Health Communication; 24(3): 244–261

Kohan S, Mohammadi F, Yazdi M, Dadkhah A. 2018Evaluation of relationship between reproductive health literacy and demographic factors in women. J Health Lit.;3(1):20-9.doi: 10.22038/jhl.2018.10928. [Persian]

Liddelow C, Mullan B & Boyes M.(2020);Adherence to the oral contraceptive pill: the roles of health literacy and knowledge. Health Psychology and Behavioral Medicine 8(1): 587-600..

Moradi M, Fazeli N, Khadivzadeh T, & Esmaily H. (2020)Application of Health Belief Model to assess Knowledge and Attitude of Women Regarding Preconception

Care. Journal of Midwifery and Reproductive Health. 2020; 8(2): 2146-2154. DOI: 10.22038/jmrh.2019.34318.1390

Moshki M, Mirzania M, Kharazmi A. (2018) The relationship of health literacy to quality of life and demographic factors in pregnant women: a cross-sectional study. J Health Lit.;2(4):203–15. https://doi.org/10.22038/jhl.2018.10875.

Needham HE, Wiemann CM, Tortolero SR, & Chacko MR (2010). Relationship between health literacy, reading comprehension, and risk for sexually transmitted infections in young women. J Adolesc Health;46:506–508

Niu Z, Qin Z, Hu P, Wang T. (2021) Health beliefs, trust in media sources, health literacy, and preventive behaviors among high-risk Chinese for Covid-19. *Health Comm*. 10:1–9. doi: 10.1080/10410236.2021.1880684

Nketiah-Amponsah E, Arthur E, Aaron A. Correlates of contraceptive use among Ghanaian women of reproductive age (15-49 years). *Afr J Reprod Health*. (2012) 16:155–70.

Nutbeam D & Lloyd JE. 2021Understanding and responding to health literacy as a social determinant of health. Annu Rev Public Health; 42(1): 159-73.

Olajide, O. E. & Omokhabi, A. A**.** (2014). Perception, Knowledge level and Barriers to Reproductive Health Behaviour among Community Women in Local Government Area (LGAs) of Oyo State, Nigeria. *African Journal of Sustainable Development.* Vol. 4. No. 2: 29-47.

Omokhabi, A. A. (2014). Determinants of reproductive health behaviour among female workers in tertiary institutions in Southwestern Nigeria. Unpublished Ph.D. Thesis, Department of Adult Education, Faculty of Education, University of Ibadan, Ibadan, Nigeria. 210 pages.

Omokhabi, A. A. (2016). Factors Influencing Reproductive Health Behaviour of Female Non-Academic Staff in the Nigerian Universities. *Ibadan Journal of Educational Studies.* Vol. 13. No. 1: 89-102.

Omokhabi, A. A. (2020). Testing Theory of Planned Behaviour in Predicting Married Women's Use of Modern Family Planning Methods at Ibadan North Local Government. In K. O. Kester; P. B. Abu; I. A. Abiona and E. J. Oghenekohwo (Eds.) *Human and Social Development Investment*. 364-390pp. Ibadan: Department of Adult Education, University of Ibadan. ISBN: 978-978-58587-0-9

Omokhabi, A. A**.** (2024) Reproductive Health Needs of Women with Disabilities: A Non-pharmaceutical Interventions Approach .*African Journal for the Psychological Study of Social Issues* Vol 27 No 2

http://ajpssi.org/index.php/ajpssi/issue/view/34

Omokhabi, A. A. & Egunyomi, D. A. (2016). Predictors of Female Lecturers Reproductive Health Behaviour in Tertiary Institutions in Nigeria. *African Journal of Educational Management.* Vol. 17. No.1: 21-54.

Omokhabi, A. A. & Fajimi, B. A., **(**2023**)** Women in Pandemics and Sustainability of African Rural Communities Shodh Sari- An International Multidisciplinary Vol. 2 No.3**:** 67-105 DOI: https://doi.org/10.59231/ SARI7593.

Orji R, Vassileva J, Mandryk R (2012) Towards an effective health interventions design: an extension of the health belief model. Online J Public Health Inform.;4(3)

Osborne RH, Batterham RW, Elsworth GR, Hawkins M, & Buchbinder R (2013);. The grounded psychometric development and initial validation of the Health Literacy Questionnaire (HLQ). BMC Public Health. 13:658. doi:10.1186/1471-2458-13-658

Paasche-Orlow MK, Wolf MS. Promoting health literacy research to reduce health disparities. J Health Commun. 2010;15(S2):34–41.

Panahi R, Ebrahimi G, Kazemi S, Tavousi M. (2018) Health Literacy: An effective component to overcome perceived barriers to adoption of preventive behaviors in the health belief model. *J Edu Comm Health.* 5:1–3. doi: 10.21859/jech.5.3.1

Panahi R, Ramezankhani A, Tavousi M, Niknami S. (2018) Adding health literacy to the health belief model: effectiveness of an educational intervention on smoking preventive behaviors among university students. *Iranian Red Crescent Med J.* 20:12. doi: 10.5812/ircmj.13773

Pang Q, Meng H, Fang M, Xing J, & Yao J. (2021) Social distancing, health concerns, and digitally empowered consumption behavior under Covid-19: a study on livestream shopping technology. *Front Public Health.* 9:748048. doi: 10.3389/fpubh.2021.748048

Rafat Bakht, Mahrokh Dolatian, Sepideh Hajian, Ali Montazeri, Hamid Alavi Majd, &Elham Zare (2023) Women's Reproductive Health Literacy: A Qualitative International Journal of Women's Health and Reproduction Sciences. 11, (1), 16–24 http://www.ijwhr.net doi 10.15296/ijwhr.2023.04

Rahman P, Ali R, Mahmoud T, Aliasghar H, Niknami S. (2018) Reinforcing the performance of health belief model using health literacy in anticipating adoption of smoking preventive behaviors in university students. *J Health Lit.* 3:39–49. doi: 10.22038/JHL.2018.10930

Rakhshkhorshid M and Sarasiyabi AS. (2017) Investigation of the health literacy level of women in reproductive age asa public health problem in Zahedan. Internationa Journal of Basic Sciences in Medicine; 2(2): 101–105

Safari Moradabadi A, Aghamolaei T, Ramezankhani A,& Dadipoor S. . (2017) The health literacy of pregnant women in Bandar Abbas. Iran J School Public Health Inst Public Health Res. ;15(2):121–32.

Shewasinad Yehualashet S, Asefa KK, Mekonnen AG, Gemeda BN, Shiferaw WS, Aynalem YA, et al. (2021) Predictors of adherence to Covid-19 prevention measure among communities in North Shoa Zone, Ethiopia based on health belief model: a cross-sectional study. *PLoS ONE.* 16:e0246006. doi: 10.1371/journal.pone.0246006

Shieh C, & Halstead JA. . (2009) Understanding the impact of health literacy on women's health. J Obstet Gynecol Neonatal Nurs. ;38(5):601-610. doi:10.1111/j.1552-6909.2009.01059.x

Squiers L, Peinado S, Berkman N, Boudewyns V, & McCormack L. (2012) The health literacy skills framework. *J Health Commun.* 17 Suppl 3:30–54. doi: 10.1080/10810730.2012.713442

Tadesse T, Alemu T, Amogne G, Endazenaw G, & Mamo E. (2020) Predictors of coronavirus disease 2019 (Covid-19) prevention practices using health belief model among employees in Addis Ababa, Ethiopia, 2020. *Infect Drug Resist.* (2020) 13:3751–61. doi: 10.2147/IDR.S275933

Tehrani H, Rahmani M & Jafari A. (2018) Health literacy and its relationship with general health of women referring to health care centers. Journal of Health Literacy; 3(3): 191-198.

United Nations Population Information Network (POPIN) (1995) UPD, Department of Economic and Social Affairs, with support from the UN Population Fund (UNFPA). Guidelines on Reproductive Health [Online]. New York: 1995.: https://www.unfpa.org/sites/default/files/resource pdf/Guidelines_complete_text_without_figures_296K.pdf.

Walrave M, Waeterloos C, & Ponnet K. (2020) Adoption of a contact tracing app for containing Covid-19: a health belief model approach. *JMIR Public Health Surveill.* 6:e20572. doi: 10.2196/20572

World Health Organization (WHO) (2019) Definition of Health [Database on the Internet]. https://www.publichealth.com.ng/world-health-organizationwho-definition-of-health/. Accessed August 1, 2019.

Yadav K, Agarwal M, Shukla M, Singh JV & Singh VK. (2020) Unmet need for family

planning services among young married women (15-24 years) living in urban slums of India. BMC Women's Health; 20(187):2-17.

Yao J, Pang Q, Zhang B, Wang L, & Huang Y. (2021) Public health and online mice technology during the Covid-19 pandemic: the role of health beliefs and technology innovation. *Front Public Health.* 9:756987. doi: 10.3389/fpubh.2021.756987

Yee LM, &Simon MA. (2014) The role of health literacy and numeracy in contraceptive decision-making for urban Chicago women. J Community Health;39:394–399

Zegeye B, Ahinkorah BO, Idriss-Wheeler D, Olorunsaiye CZ, Adjei NK & Yaya S.F(2021) Modern contraceptive utilization and its associated factors among married women in Senegal: a multilevel analysis. BMC Public Health; 21(1): 231-244.