

Pregnancy-Related Information Seeking and Associated Factors among Pregnant Women at Public Health Facilities in Debre Tabor City Administration, Northwest Ethiopia: A cross-sectional study

Haregewoin Berhan, Tesfahun Yilma, Sisay Wubante, Mulugeta Kalayou, Melaku Sisay

Submitted to: Online Journal of Public Health Informatics on: June 06, 2024

Disclaimer: © **The authors. All rights reserved.** This is a privileged document currently under peer-review/community review. Authors have provided JMIR Publications with an exclusive license to publish this preprint on it's website for review purposes only. While the final peer-reviewed paper may be licensed under a CC BY license on publication, at this stage authors and publisher expressively prohibit redistribution of this draft paper other than for review purposes.

Table of Contents

Original Manuscript.......4

Pregnancy-Related Information Seeking and Associated Factors among Pregnant Women at Public Health Facilities in Debre Tabor City Administration, Northwest Ethiopia: A cross-sectional study

Haregewoin Berhan¹; Tesfahun Yilma²; Sisay Wubante²; Mulugeta Kalayou³; Melaku Sisay³

Corresponding Author:

Haregewoin Berhan

Abstract

Background: Pregnant women need health information to engage in preventive health behaviors, improve self-care, and reduce anxiety. Lack of information about pregnancy-related complications is a challenge. Seeking health information reduces risk factors and raises awareness for future outcomes.

Objective: This study aimed to assess pregnancy-related information-seeking and associated factors among pregnant women in Debre Tabor City Administration health facilities, Northwest Ethiopia, 2022.

Methods: A cross-sectional survey was conducted among pregnant women in Debre Tabor City Administration health facilities from May to July 2022, with 423 participants using a census method. Data was collected using an interviewer-based questionnaire, and analysis was performed using Epi Info 7.2 and SPSS version 26. Factors associated with pregnancy-related information seeking were assessed using descriptive statistics and logistic regression models

Results: The proportion of pregnancy-related information seeking among pregnant women was 52.7% (48.2, 57.5). The mean age of the study participants was 28.29 ± 4.96 SD years and 59.3% of pregnant women were urban residents. Place of residence (AOR=2.08, CI=1.2, 3.59), Occupation (AOR=3.03, CI=1.46, 6.27), digital literacy (AOR=1.74, CI=1.01, 2.99), self-efficacy (AOR=6.59, CI=3.88, 11.17), perceive severity to pregnancy-related complication (AOR=3.67, CI=2.16, 6.23) were significant factors associated with pregnancy-related information seeking.

Conclusions: Pregnancy-related information seeking among pregnant women was found to be low. An increasing level of digital literacy and awareness of pregnancy-related complications could improve PRI seeking of pregnant women.

(JMIR Preprints 06/06/2024:62970)

DOI: https://doi.org/10.2196/preprints.62970

Preprint Settings

- 1) Would you like to publish your submitted manuscript as preprint?
- ✓ Please make my preprint PDF available to anyone at any time (recommended).

Please make my preprint PDF available only to logged-in users; I understand that my title and abstract will remain visible to all users. Only make the preprint title and abstract visible.

- No, I do not wish to publish my submitted manuscript as a preprint.
- 2) If accepted for publication in a JMIR journal, would you like the PDF to be visible to the public?
- ✓ Yes, please make my accepted manuscript PDF available to anyone at any time (Recommended).

¹University of Gondar Gondar ET

²Wollo university Dessie ET

Original Manuscript

Pregnancy-Related Information Seeking and Associated Factors among Pregnant Women at Public Health Facilities in Debre Tabor City Administration, Northwest Ethiopia: A cross-sectional study

Haregewoin Wuletaw Berhan¹ Tesfahun Melese Yilma² Zeleke Abebawu Mekonnen³ Sisay Maru Wubante² Mulugeta Hayelom Kalayou¹ Melaku Molla Sisay¹

Affiliations

¹Department of Health Informatics, School of Public Health, College of Medicine and Health

Science, Wollo University, Ethiopia

²Department of Health Informatics, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia

³Health System Strengthening Directorate, Ministry of Health, Addis Ababa, Ethiopia.

Corresponding author: Haregewoin Wuletaw Berhan

Email: <u>Haregw24@gmail.com</u>

Mobile: +251 936033326

Abstract

Introduction: Pregnant women need health information to engage in preventive health behaviors, improve self-care, and reduce anxiety. Lack of information about pregnancy-related complications is a challenge. Seeking health information reduces risk factors and raises awareness for future outcomes.

Objectives: This study aimed to assess pregnancy-related information-seeking and associated factors among pregnant women in Debre Tabor City Administration health

facilities, Northwest Ethiopia, 2022.

Methodology: A cross-sectional survey was conducted among pregnant women in Debre Tabor City Administration health facilities from May to July 2022, with 423 participants using a census method. Data was collected using an interviewer-based questionnaire, and analysis was performed using Epi Info 7.2 and SPSS version 26. Factors associated with pregnancy-related information seeking were assessed using descriptive statistics and logistic regression models.

Result: The proportion of pregnancy-related information seeking among pregnant women was 52.7% (48.2, 57.5). The mean age of the study participants was 28.29 ± 4.96 SD years and 59.3% of pregnant women were urban residents. Place of residence (AOR=2.08, CI=1.2, 3.59), Occupation (AOR=3.03, CI=1.46, 6.27), digital literacy (AOR=1.74, CI=1.01, 2.99), self-efficacy (AOR= 6.59, CI=3.88, 11.17), perceive severity to pregnancy-related complication (AOR=3.67, CI=2.16, 6.23) were significant factors associated with pregnancy-related information seeking.

Conclusion: Pregnancy-related information seeking among pregnant women was found to be low. An increasing level of digital literacy and awareness of pregnancy-related complications could improve PRI seeking of pregnant women.

Keyword: Pregnancy-related information seeking, information seeking, pregnant women, Debre Tabor city administration, Ethiopia

Introduction

Pregnancy and labor complications are major causes of mortality in underdeveloped countries, making antenatal health education crucial for pregnant women. It empowers them, promotes preventive health behaviors, boosts self-care, and reduces anxiety in stressful situations(1). The World Health Organization reports 580,000 annual pregnancy-related deaths, 90% of maternal and neonatal tetanus cases in Southeast Asian and Sub-Saharan African countries, and 40% of pregnant women being anemic globally (2-5). One of the challenges is a lack of proper information about pregnancy-related complications and problems.

Pregnancy is not simply a time of physical changes; it is also a time when health-related decisions are crucial and can have an impact on the mother's and the newborn's lives (6, 7). Pregnant women should receive regular vaccinations for influenza, tetanus, diphtheria, and

pertussis and be educated on nutrition, vaccination, and potential pregnancy-related complications (8, 9).

Ethiopian Demographic and Health Survey (EDHS 2016) report showed that the proportion of TT protective dose immunization was 49% (10, 11). A systematic review and meta-analysis in Ethiopia revealed that 52.6% of women receive at least two TT protective dose immunizations during pregnancy, indicating a low level of information (3, 12). Ethiopia continues to experience maternal and child mortality due to preventable causes such as pregnancy complications (hypertension disorders, postpartum hemorrhage, and obstetric fistula), preterm birth complications, and infectious diseases (13).

Maternal information is crucial for women's health, but there's a lack of understanding about how women seek it, particularly in high-density areas, highlighting a gap in information-seeking behavior(14).

Studies reveal that women often face challenges in accessing health information during pregnancy, including poor hospital care, long waiting times, fear of discussing pregnancy with a physician, and a shortage of time(15-17).

How people understand health, illness, risk, and health improvement is referred to as health information-seeking behavior or HISB(18). Practicing health information seeking effectively can lead to activities that improve health and is a crucial way of understanding how people access health information(19). Health information seeking is crucial for reducing risk factors and raising awareness about the significance of pregnancy-related information for current and future outcomes.

Pregnancy-related information-seeking can improve a mother's health and the newborn's, but limited information-seeking behavior and culture in developing countries like Ethiopia hinder its potential to minimize complications, deaths, and neonatal deaths (20). Even though there is a lot of information regarding how women seek maternal information, especially in densely populated areas, very little is known about how they do it (7).

General Objective

The general objective of this research study is to assess health information seeking and its associated factors among pregnant women in the Debre Tabor City Administration health facility, North West Ethiopia, 2022.

Specific objectives

To determine the proportion of pregnancy-related information seeking among pregnant women in Debre Tabor City Administration health facilities, Northwest Ethiopia, 2022.

To identify factors associated with pregnancy-related information seeking among pregnant women Debre Tabor City Administration health facilities, North West Ethiopia, 2022.

Methods

Study Design

An institutional-based cross-sectional survey was conducted to assess pregnancy-related information seeking among pregnant women in the health facilities at Debre Tabor City Administration using a quantitative approach.

Study area and period

The study surveyed pregnant women in the Debre Tabor City Administration from May to July 2022. The town, located 669 km northwest of Addis Ababa and 97 km southwest of Bahir Dar, Ethiopia, was the capital of the South Gondar Administrative zone of the Amhara region.

Source population

The source population of the study was all pregnant women found in Debre Tabor City Administration health facilities during the study period.

Study population

All pregnant women attending the 4th ANC service in Debre Tabor City Administration health facilities were taken as the study population during the study period.

Inclusion criteria

All pregnant women attending 4th ANC services and available during data collection in the Debre Tabor City Administration health facilities were included.

Exclusion criteria

All pregnant women attending 4^{th} ANC services who were seriously ill were excluded from the study.

Sample size determination

The sample size was calculated using a single population proportion formula with the assumptions of 95% confidence level (CI), Z (1- α /2) =1.96), an expected proportion of PRI seeking of 50% (p), and a 5% margin of error(d). Since Ethiopia does not have the same study, 50% of the pregnancy-related information-seeking percentage was taken.

 $n = (Z\alpha/2) 2x pq$

d₂

 $n = (1.96)_2 \times 0.5 \times 0.5 = 384$

 $(0.05)_2$

With the following assumptions:

Z = Standard normal deviation (1.96 for a 95% confidence level),

- n = is the sample size,
- p = the proportion of the population (p=50%),
- d = margin of error that precision (d=0.05),

By assuming the non-response rate of 10% (39) the total sample size was 423.

Sampling procedure

Four health facilities exist in the Debre Tabor City Administration, of which one is a specialized hospital. The other three are health centers. All pregnant women attending the 4th visit to ANC service in Debre Tabor City Administration health facilities (423) were included in the study (census).

Operational definition

- Information-seeking: a complex information and communication activity requiring access to diverse sources of information to deal with a personal, social, and work-related problem(14).
- Pregnancy-related information-seeking: It is the searching/seeking of information about pregnancy from any source during the pregnancy period. To ascertain whether respondents sought pregnancy-related information during the pregnancy, a one-item question was utilized (No= Respondents did not seek information during pregnancy, Yes= Respondents did seek information during pregnancy) (21, 22). The question was proposed to respondents: Have you ever sought pregnancy-related information PURPOSELY from various sources? After that, respondents were asked about pregnancy-related information sources, categories of pregnancy-related information, and reasons for seeking pregnancy-related information.

Data collection tools

The study utilized a pre-tested, interviewer-administered questionnaire, which was translated into English, Amharic, and back to English for consistency, and included closed-ended questions, Likert scale responses, and response options. The study's instrument (tool) was adapted from various sources and modified to fit our environment and objectives (21-25).

The Health Information National Survey Tool (HINTS) was used to create the questionnaire for the outcome variable(23). The instrument for psychological aspects, on the other hand, is based on the health belief model (HBM)(24). The

study analyzed socio-demographic variables, pregnancy-related informationseeking, technological factors like digital literacy, behavioral factors, and psychological factors in four parts, aiming to develop an instrument that considers all these aspects.

Data collection procedure

Interviews with study participants were used to gather data through supervisors and trained data collectors. Before data collection started, 10% of the population completed a pretested questionnaire, and any errors or confusion were fixed.

Data Quality Control

Data quality is ensured through training for data collectors, translation of questionnaires from English to Amharic, and consistency checks. Pre-tested questionnaires were used, and data collection techniques were closely monitored. After data collection, questionnaires were reviewed and cleansed for errors and missing values. Cronbach's alpha was computed to determine the internal consistency of assessment tools.

Data Processing and Analysis

A data entry form was prepared using Epi Info 7.2 versions, and analysis was conducted using SPSS version 26. Descriptive statistics were computed for socio-demographic characteristics, technological, and others and presented in the form of tables, figures, and text. A bi-variable and multivariable binary logistic regression were used to assess factors associated with pregnancy-related information seeking. Accordingly, the findings were presented as odds ratios with their corresponding 95% confidence intervals. Hosmer and Leme's show test was used to check the model fit (0.88). The result was presented in the form of tables, figures, and texts. Each independent variable with a dependent was checked to see if it was significant with p<0.2, called bivariate, and the significant variable had a cut point of 0.2. A P-value less than or equal to 0.05 will be taken as a cutoff value for being significant.

Result

Socio-demographic characteristics

A study of 423 participants were conducted, with a 100% response rate. The majority were married, with orthodox religious participation at 85.3%. The majority were housewives, with 38.8% and 22.9% government employees. The majority were urban residents, with a monthly family income of 6300 ETB. The socio-

demographic information of the respondents is presented in Table 1

Psychological factors

Among the 423 study participants, 59.5% (252/423) perceived that they were concerned about pregnancy-related complications, and 41.6% (176/423) perceived that pregnancy-related complications were severe. Table 2 provides detailed information about the psychological factors of the study participants.

Behavioral and Health-related factors

About 28.4% (120/423) of study participants had moderate physical exercise and 50.6% (214/423) had given birth through normal delivery (by uterus). 42.8% (181/423) of respondents had adequate health literacy. Table 3 provides detailed information about the behavioral and health-related factors of the study participants.

Technological factors

The majority of the respondents 42.8% (181/423) and 37.8% (160/423) had computer/smartphone access and internet access respectively. Table 4 provides detailed information about the technological factors of the study participants.

Pregnancy-related information seeking among pregnant women

Among the total respondents, 52.7% (223) of study participants had PRI seeking during pregnancy. Out of the information seekers, about 25.6% were above secondary educational level and 51.1% have used the internet to seek pregnancy-related information.

Frequency of PRI seeking

Regarding the frequency of pregnancy-related information seeking, about 49.6% of PRI seekers sought information occasionally (once every three months), and 47% of them sought it once a month. Detailed information about the Frequency of pregnancy-related Information seeking presented in Figure 1.

Sources of pregnancy-related information

The study participants asked about the source of pregnancy-related information. The result of this study indicated that 83% (185) of PRI seekers preferred the health care providers as their primary PRI sources followed by family or friends at 61.4% (137). In contrast, magazine 4.9% (11) and book 5.8% (13) were the least preferred PRI sources. Figure 2 presents detailed information about preferred

PRI sources.

Level of trust in PRI sources

This study showed that 77.2% (172) and 56% (125) of the study participants had a lot of trust in PRI from Health care providers and family/friends respectively. Among PRI seekers 21.5% (48) of pregnant women have never trusted PRI on the internet. Figure 3 presents detailed information about preferred PRI sources.

Reasons for seeking pregnancy-related information

The reasons for seeking PRI were, the majority 86.1% (192) and 72.2% (161) of the respondents had sought to prevent pregnancy-related complications and for knowing the health status of a newborn baby as a primary reason for seeking information respectively. In contrast, knowing about dietary mechanisms 37.2% (83) were the least preferred reasons for seeking PRI. Figure 4 presents detailed information about the reasons for seeking PRI.

Reasons for not seeking pregnancy-related information

The reasons for not seeking PRI were the majority 68.5% (137) and 20% (40) of the respondents were fear of becoming pregnancy-related complications and Mistrust of online information respectively. In contrast, Pregnancy-related information not interesting (1.5%) was the least preferred reason for not seeking PRI. Figure 5 presents detailed information about the reasons for seeking PRI.

Factors associated with PRI Seeking

To identify significant factors associated with pregnancy-related information seeking, bivariable and multivariable logistic regression were undertaken. The result of the bivariable logistic regression analysis indicated that pregnant women's place of residence, educational status, occupation, internet access, digital literacy, self-efficacy, perceived susceptibility, and perceived severity were bivariable logistic regression variables with a p-value of less than 0.2 that were considered for multivariable analysis. In the multivariable analysis, place of residence, occupation, digital literacy, self-efficacy, and perceived severity were identified as the significant factors associated with PRI seeking.

The odds of PRI seeking among urban-resident pregnant women are two times higher than among rural-resident pregnant women (AOR = 2.08, 95% CI = 1.2, 3.59). The findings of this study indicated that pregnant women whose occupation was government employment were three times more likely to seek

PRIS than non-governmental employees (AOR = 3.03, 95% CI = 1.46-6.27).

In addition to this, the participants who were confident in self-efficacy were 6.59 times more likely to seek pregnancy-related information compared to participants who were not confident in self-efficacy (AOR = 6.59, 95% CI = 3.88–11.17). The participants who had a high perceived severity of pregnancy-related complications were 3.67 times more likely to seek PRI compared to those who had a low perceived severity of pregnancy-related complications (AOR = 3.67, 95% CI = 2.16–6.23). Table 6 provides detailed information about the bivariable and multivariable analysis of factors associated with PRI seeking.

Discussion

This study tried to find out pregnant women's pregnancy-related information seeking. The result from this study is used to identify the possible PRI sources preferred by pregnant women and factors associated with PRI seeking. In addition to this, the findings will give directions to pregnant women to use different PRI sources to prevent pregnancy-related complications. Policymakers and other interested parties may utilize the study's findings to inform the development of a plan aimed at reducing the occurrence of pregnancy-related problems.

The findings of the study showed that 52.7% (CI = 48.2, 57.5) of expectant mothers looked for PRI from various sources when they were carrying children. Not more than half of the respondents in this survey sought out pregnancy-related information, suggesting that additional work is needed. Pregnant women on their fourth visit should have enough knowledge to make an informed decision about how to prevent pregnancy-related issues.

This result is lower than a study conducted in Sudan (59.2%)(26). This variation might be half of the respondents have completed university (47.4%)(26). In comparison, the current study participants are 24.1%. Additional reasons might be studies conducted in Sudan, 20.8% of the participants sought information online.

Similarly, this study's outcome is lower than that of the research conducted in Sri Lanka (61%) (34). This variation may be the cause of differences in the participants' educational backgrounds (30.5% of participants had graduated), as well as differences in the number of pregnancies (28.6% of participants had more than or equivalent to three pregnancies, compared to 12.8% in our study).

Regarding pregnancy-related information sources, around 83% of PRI seekers preferred the health care provider followed by family or friends as their primary PRI sources, which is consistent with the previous study conducted in Ethiopia(88.6%)(22). This is due to the reason that almost all of the pregnant women (77.2%) have high trust in health care providers as compared to other sources of PRI which is identified in this study. Health care providers were easily accessible to pregnant women as compared to other sources of PRI and pregnant women have a good trust in health care providers. This study shows that increasing the credibility of healthcare providers makes them a better source of information.

However, This finding is higher than a previous study conducted in Sudan (61.6%) for health care providers followed by (20.8%) for the internet as the most common source (26) and also have 30% internet access (27).

According to the result of this study, the least information sources were 4.9% and 5.8% of magazines and books respectively compared to studies conducted in Nigeria with pregnant women where 59.6% of primary sources were books and magazines were primary sources (28). This is due to the high literacy rate in Nigeria (95.1%) but these studies showed that 14.7% of participants are unable to read and write. Also, the internet was 14.4% as a source in this study compared to similar Nigeria pregnant women were 40.4% more popular source of the internet (28). This difference is due to the reason that Nigeria's internet penetration rate is 66.44%, and Ethiopia's internet penetration rate is 17.7%(27). Also, this television is 21.5% a source lower when compared to Indian main information sources Television (96.22%) (29). this is due to long differences between Indian 97.6%(30) and Ethiopia's 45% electric power access(31).

This study indicated that the primary reasons for seeking PRI were that the majority (86.1%) and 72.2% of the pregnant women sought information to prevent pregnancy-related complications and to know the health status of a newborn baby, respectively. The result is higher than studies conducted on Indian pregnant women. 37.73% for disease prevention and control, and 43.39% for baby care(29). These verities may be due to the many diseases that appeared in Ethiopia because of developing countries.

This study indicated that urban residence respondents were 2 times more likely to seek PRI as compared to rural residents. The possible reason for this is that urban residence women had high access and awareness of pregnancy-related

information.

This study has also found that PRIS was associated with respondents' digital literacy. Respondents who had high digital literacy levels were 1.7 times more likely to seek PRI when compared with those who had low digital literacy levels. This finding is supported by a study conducted in Nigeria, which stated that a low level of digital literacy affects information seeking(7). The possible explanation for this could be that there are people with high digital literacy levels who know how to get information on the internet and also easily access their computer or smartphone.

In this study, respondents who had confidence in their health self-efficacy were 6.5 times more likely to seek PRI when compared with those who had no confidence in their self-efficacy. This finding is consistent with a study conducted in the US(32) and India(33) in which participants who felt more confident were more likely to have better health information seeking as compared with those who had to feel less confident(32).

This study showed that respondents who had a high perceived severity of pregnancy-related complications were 3.6 times more likely to seek PRI than respondents who had a low perceived severity of pregnancy-related complications. This finding is consistent with a former study on perceived severity in India (33). Respondents who perceive pregnancy-related complications as severe want to know the risk factors, prevention mechanisms, and diagnosis of pregnancy-related complications.

Strengths and Limitations of the study

As to my literature search, the study is the first attempt in the area, so future researchers should use the results as baseline data.

The study was a facility-based cross-sectional study, which may not articulate to us the causal inference between variables. The study assessed pregnancy-related information seeking in the past 9 months; there may have been a chance of recall bias by the participants. Interviewer-administered data collection methods may be affected by interviewer bias.

Conclusion

The overall prevalence of pregnancy-related information seeking among pregnant

women in Debre Tabor health facilities was low. In this study, only 52.7 percent of data shows that this is low because only half percent of pregnant women are on the 4th ANC follow-up. This means that every time the mother is about to give birth, she needs to know the full information. For this reason, this study thinks half a percent is low.

Respondents preferred the health care provider as a primary PRI source followed by family or friends. In this study, respondents sought PRI primarily for the prevention of pregnancy-related complications followed by knowing a newborn baby.

However, the result shows fear of pregnancy-related complications and lack of trust in the internet (online information) were the main reasons for pregnant women not seeking PRI. Place of residence, occupation, digital literacy, self-efficacy, and perceived severity of pregnancy-related complications were significant factors associated with PRI seeking.

To increase their level of pregnancy-related information seeking among pregnant women by improving, their digital literacy level and also giving awareness severity of pregnancy-related complications.

Abbreviations and acronyms

ANC: Antenatal Care, OR: Adjusted Odd Ratio, AUDIT-C: Alcohol Use Disorders Identification Test—Consumption, CI: Confidence Interval, C/S: Caesarean section, AMRH: Amhara Regional Health Bureau; EDHS: Ethiopian Demographic Health Survey; FMOH: Federal Ministry of Health; HINTS: Health Information National Trends Survey; IRB: Institutional Review Board; LMIC: Low and Middle-Income Countries; MCH: Maternal and Child Health; PRI: pregnancy-related information; PRIS: pregnancy-related information seeking; SD: Standard Deviation, SPSS: Statistical Package for the Social Sciences, SSA: Sub-Saharan African, TT: Titanus Toxoid, UoG: University of Gondar, USA: United States of America; WHO: World Health Organization.

Ethics approval and consent to participate

We obtained ethical clearance from the ethical review board of University of Gondar College of Medicine and Health Science. Informed consent was obtained from each study participant. To keep the confidentiality of information provided by the study subjects, the data collection procedure was anonymous.

Consent for publication

Not applicable

Availability of data and materials

The datasets generated and/or analyzed during this study will be available upon reasonable request from the corresponding author.

Competing interests

The authors declare that we have no competing interests

Funding

Not applicable

Acknowledgments

The authors would like to thank the University of Gondar Institute of public health for the ethical clearance approval, data collectors, supervisors, and study participants in our study.

Authors' contributions

The study design, study selection, data extraction, statistical analysis, and the early drafts of the paper were all significantly made by HWB. TMY, ZAM, ADW, SMW, and MHK were handle data extraction, quality evaluation, statistical analysis, and reviewing. The final draft of the manuscript was written by HWB, TMY, MMS, and SMW. All authors have read and approved the final draft.

References

- 1. Noncungu TM, Chipps JAJHSG. Information-seeking in first visit pregnant women in Khayelitsha, South Africa. Health SA Gesondheid 25(0),a1478. 2020;25(1).
- 2. WHO. World health statistics 2018: monitoring health for the SDGs, sustainable development goals: World Health Organization; 2018.
- 3. Nigussie J, Girma B, Molla A, Mareg M. Tetanus Toxoid Vaccination Coverage and Associated Factors among Childbearing Women in Ethiopia: A Systematic Review and Meta-Analysis. BioMed research international. 2021;2021:5529315.
- 4. Saltzman S. Improving maternal and child mortality in Ethiopia. (available from internet: https://borgenprojectorg/maternal-and-child-mortality-in-ethiopia/#:~:text=A%20key%20cause%20of%20maternal,by%20the%20close%20of%202020). 2020.
- 5. Yared Mekonnen AM. Utilization of Maternal Health Care Services in Ethiopia. Calverton, Maryland, USA:. 2002.
- 6. Javanmardi M, Noroozi M, Mostafavi F, Ashrafi-Rizi HJRH. Challenges to access health information during pregnancy in Iran: a qualitative study from the perspective of pregnant women, midwives and obstetricians. 2019;16(1):1-7.
- 7. Dalyop EB, Jacob EE. Information Seeking Behaviour of Pregnant Women in Jos South Local Government Area of Plateau State, Nigeria. African Scholar Publications & Research International. 2020;18 NO. 6.
- 8. prevention Codca. Vaccines During Pregnancy FAQs. (available from internet: https://www.cdcgov/vaccinesafety/concerns/vaccines-during-pregnancyhtml).
- 9. Simionescu AA, Streinu-Cercel A, Popescu F-D, Stanescu AMA, Vieru M, Danciu BM, et al. Comprehensive overview of vaccination during pregnancy in Europe. Journal of Personialized Medicine. 2021;11(11):1196.
- 10. Csa IJ, Central Statistical Agency. Central Statistical Agency (CSA) [Ethiopia] and ICF. Ethiopia Demographic and Health Survey, Addis Ababa. Central Statistical Agency (CSA). 2016.
- 11. Gessesse DN, Yismaw AE, Yismaw YE, Workneh TW. Coverage and determinants of protective dose tetanus toxoid vaccine among postnatal women

delivered at the university of Gondar comprehensive specialized hospital, northwest Ethiopia, 2019. Clinical Epidemiology and Global Health. 2021;12:100814.

- 12. Gessesse DN, Yismaw AE, Yismaw YE, Workneh TWJCE, Health G. Coverage and determinants of protective dose tetanus toxoid vaccine among postnatal women delivered at university of Gondar comprehensive specialized hospital, northwest Ethiopia, 2019. 2021;12:100814.
- 13. Chan GJ DJ, Getnet M, et al. Gaps in maternal, newborn, and child health research: a scoping review of 72 years in Ethiopia. Journal of Global Health Reports. 2021.
- 14. Mumba C, editor The information- seeking behaviour of women attending antenatal clinic: a case study of women in makululu- kabwe2015.
- 15. Das A, Sarkar MJTYjob, medicine. Pregnancy-related health information-seeking behaviors among rural pregnant women in India: validating the Wilson model in the Indian context. 2014;87(3):251.
- 16. Nasrollahzadeh S. Health information-seeking behavior of pregnant women: A grounded theory study. 2014.
- 17. Onuoha UD, Amuda AAJIiJoi, Management K. Information seeking behaviour of pregnant women in selected hospitals of Ibadan metropolis. 2013;4(1):76-91.
- 18. Lambert SD, Loiselle CGJQhr. Health information—seeking behavior. qualitative health research. 2007;17(8):1006-19.
- 19. Chaudhuri MS, le MT, White MC, Thompson H, Demiris GJ. Examining health information—seeking behaviors of older adults. computers, informatics, nursing:CIN. 2013;31(11):547.
- 20. Gavgani VZ, Qeisari E, Jafarabadi MAJH. Health information seeking behavior (HISB): a study of a developing country. Library philosophy and practice. 2013;2:1-2013.
- 21. Kassie SY, Melese T, Handebo S, Sebastian Y, Ngusie HS. Information seeking about COVID-19 and associated factors among chronic patients in Bahir Dar city public hospitals, Northwest Ethiopia: a cross-sectional study. BMC infectious diseases. 2022;22(1):325.
- 22. Mengiste M, Ahmed MH, Bogale A, Yilma T. Information-Seeking Behavior and Its Associated Factors Among Patients with Diabetes in a Resource-Limited Country: A Cross-Sectional Study. Diabetes, metabolic syndrome and obesity: targets and therapy. 2021;14:2155-66.
- 23. HINTS. Health Information National Trends Survey(HINTS), HINTS 5 cycle 4 survey. [Internet] Available from: https://hintscancergov/docs/Instruments/HINTS5_Cycle4_AnnotatedInstrumentEnglishpdf. 2020.
- 24. Janz NK, Becker MHJHeq. The health belief model: A decade later. health education quarterly. 1984;11(1):1-47.
- 25. Shimie AW, Gashu KD, Shiferaw AM, Mengiste SAJRH. Information-seeking behavior on sexually transmitted infections and its associated factors among university students in Ethiopia: a cross-sectional study. Reproductive health. 2022;19(1):1-11.
- 26. Sabahelzain MM, Ibrahim ZA, Hamad SAB, Finnegan G. Vaccine Information Seeking Behavior Among Pregnant Women in Khartoum State, Sudan: A Hospital-Based Cross-Sectional Study. Frontiers in public health. 2021:9:586333.
- 27. W B. Internet world statstics [31/07/2022] Available from internet: https://www.internetworldstats.com/stats1.htm. hindawi. 2022.
- 28. Obajimi GJAJoM, Sciences M. Health information-seeking behaviour of

pregnant women at the University College Hospital, Ibadan, Nigeria. African journal of medicine and medical sciences. 2019;48(2):191-8.

- 29. Yadav S, Sinha MK, Verma MKJS, Technology Metrics . Pichappan Pit et. al. CDIRF. A Study on Information Seeking Behavior of Pregnant Women of Select Government Hospitals of Lakhipur Cachar, Assam with Special Reference to Printed and Online Resources/e-Science Resources. 2019.
- 30. Agrawal S, Sunil Mani, Abhishek Jain, and Karthik Ganesan. State of Electricity Access in India: Insights from the India Residential Energy consumption Survey (IRES) 2020. New Delhi: Council on Energy, Environment and Water. 2020.
- 31. Pappis IS, A.;, Walle TB, O.; Eludoyin, E.;, Howells MU, W. Influence of Electrification Pathways in the Electricity Sector of Ethiopia—Policy Implications Linking Spatial Electrification Analysis and Medium to Long-Term Energy Planning. Energies. 2021:14.
- 32. Shieh C, Broome ME, Stump TE. Factors Associated with Health Information-Seeking in Low-Income Pregnant Women in U.S. Women & Health. 2010;50(5):426-42.
- 33. Das A, Sarkar M. Pregnancy-related health information-seeking behaviors among rural pregnant women in India: validating the Wilson model in the Indian context. The Yale journal of biology and medicine. 2014;87(3):251-62.

Annex

Table 1: Socio-demographic Characteristics of Respondents at Debre Tabor City Administration Health facilities, Northwest Ethiopia, 2022 (n=423)

Variable	Category	Frequency (#)	Percept (%)
	<=28	240	56.7
Age	>28	183	43.3
	Urban	251	59.3
Residence	Rural	172	40.7
	Orthodox	361	85.3
		47	05.5
	Muslim	12	11.1
Religion	Protestant		2.8

	Catholic	3	0.7
	Unable to read and write	62	14.7
Educational	Able to read and write	69	16.3
status	Primary education	134	31.7
	Secondary education	56	13.2
	Higher education(Diploma and above)	102	24.1
	Married	376	88.9
Marital status	Divorce	20	4.7
	Windowed	11	2.6
	Separated	9	2.1
	Single	7	1.7
	Housewife	164	38.8
	Government Employee	97	22.9
Occupation	Farmer	44	10.4
	Merchant	43	10.2
	Jobless/jobseeker	33	7.8
	Non-governmental	28	6.6
	Student	14	3.3
Number o	f <=2	302	71.4
pregnancy	>2	121	28.6
Monthly family	/ <5000	200	47.3
income	5000-10000	190	44.9
	>10000	33	7.8

Table 2: Psychological factors to PRI seeking among pregnant women at Debre Tabor City Administration health facilities, Northwest Ethiopia, 2022

Variables	Category	Frequenc	Percentage (%)
Health Self-efficacy	Confident Not confident	y 201 222	47.5 52.5
Perceived Susceptibility to PR complication	Concerned	252	59.5
	Not concerned	171	40.5
Perceived Severity of PR complication	Sever	176	41.6
	Not sever	247	58.4

Table 3: Behavioral and health related factors to PRI seeking among pregnant women at Debre Tabor City Administration health facilities, Northwest Ethiopia, 2022

	Category	Frequency	Percentage (%)
Physical	Low	303	71.6
exercise	Moderate	120	28.4
Alcohol	Yes	327	77.3
consumer	No	96	22.7
Chronic disease	No	412	97.4
	Yes	11	2.6
Which mode of giving birth type	Normal birth- giving type	214	50.6
	First time of pregnancy	129	30.5
	C/S	53	12.5
	Both	27	6.4

Health literacy Limited 242 57.2

Adequate 181 42.8

Table 4: Technological factors to PRI seeking among pregnant women at Debre Tabor City Administration health facilities, Northwest Ethiopia, 2022

Variables	Category	Frequency	Percentage (%)
Computer/ smartphone access	No	242	57.2
	Yes	181	42.8
Internet access	No	263	62.2
	Yes	160	37.8
Digital literacy	Low	266	63
	High	157	37

Table 5: Factors Associated with PRIS among pregnant women at Debre Tabor City Administration health facilities 2022

Variables	Category	Informatio	Pregnancy-related Information Seeking(n=423)		AOR (95%)	•
		Yes(223)	No(200)	COR (95%)	71011 (0070)	

IR Preprints					Berhan et al
Residence	Urban	161(72)	90(30)	3.17(2.12,4.76)	2.08(1.2,3.59)**
	Rural	62(28)	110(70)	1	1
Occupation	Non-governmental Governmental	143(64) 80(36)	183(91.5) 17(8.5)	1 6.02(3.42,10.6 2)	1 3.03(1.46,6.27)**
Internet access	Yes No	117(52.5) 106(47.5)	43(21.5) 157(78.5)	4.03(2.63,6.18) 1	1.65(0.91,3.0) 1
Digital literacy level	High Low	91(40.8) 132(59.2)	66(33) 134(67)	1.4(0.94,2.08)	1.74(1.01,2.99)* 1
Health self- efficacy	Confident Not Confident	161(72.2) 62(27.8)	40(20) 160(80)	10.39(6.59,16.35) 1	6.59(3.88,11.17)** 1
Perceived Severity	Sever Not sever	136(61) 87(39)	40(20) 160(80)	6.25(4.03,9.69)	3.67(2.16,6.23)**

Note: *p-value>0.01* and <0.01**; 1= reference category

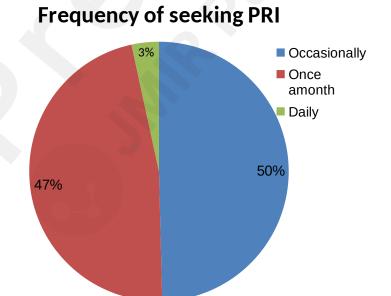


Figure 1: Frequency of seeking PRI among pregnant women at Debre Tabor City Administration health facilities, Northwest Ethiopia, 2022

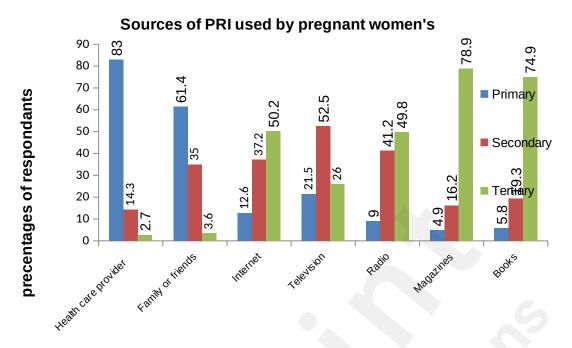


Figure 2: Preferred PRI source of pregnant women at Debre Tabor City Administration health facilities, Northwest Ethiopia 2022.

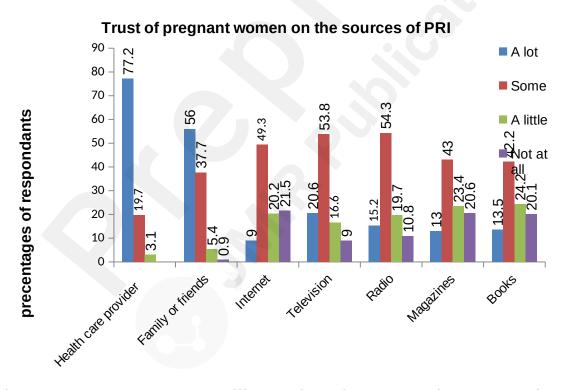


Figure 3: Pregnant Women Trust Different Information Sources about PRI at Debre Tabor City Administration health facilities, Northwest Ethiopia 2022.

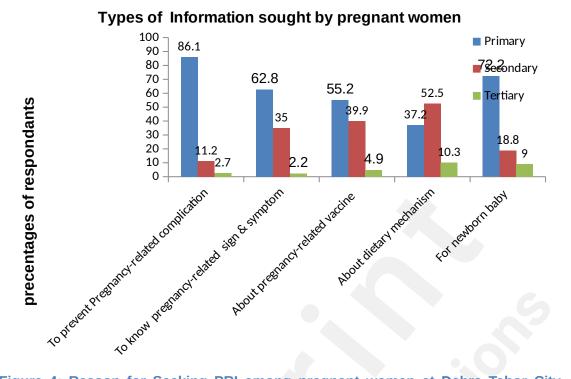


Figure 4: Reason for Seeking PRI among pregnant women at Debre Tabor City Administration health facilities, northwest Ethiopia, 2022.

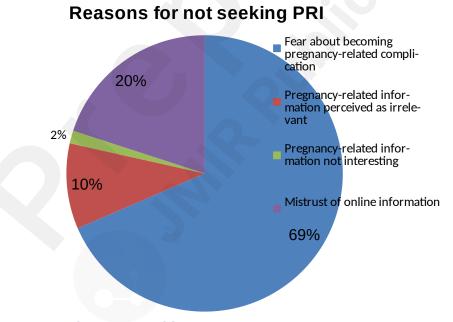


Figure 5: Reason for not Seeking PRI among pregnant women at Debre Tabor City Administration health facilities, northwest Ethiopia, 2022.