

Study of information literacy skills related to the health of female students

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ABSTRACT

In today's digital age, the sheer volume of available information has made it challenging to identify, evaluate, and apply credible knowledge effectively. Information literacy has therefore become a critical 21st-century skill, with implications that extend well beyond academic settings into healthcare, decision-making, and everyday life. At the intersection of information literacy and health literacy lies Health Information Literacy (HIL), which enables individuals to access, understand, and use reliable health information for informed choices and better outcomes. This paper underscores the significance of women's HIL, particularly in rural contexts where disparities persist due to limited education, financial barriers, and restricted healthcare access. Strengthening women's HIL fosters empowerment, maternal and child health, effective care navigation, and self-advocacy, while inadequate literacy is linked to adverse pregnancy outcomes, poor healthcare utilization, and negative child development. Bridging these gaps is vital not only for individual and community well-being but also for promoting gender equality and advancing the Sustainable Development Goals.

KEYWORDS: Information literacy, Health information literacy.

INTRODUCTION

The 21st century is characterized by an unprecedented expansion of information, driven by digital technologies, the internet, and widespread information and communication technologies (ICTs). While this rapid growth has democratized access to knowledge, it has simultaneously generated problems of information overload and misinformation, making it increasingly difficult for individuals to discern reliable from unreliable sources (American Library Association, 1989; Lokesh & Adithya Kumari, 2023). In such a context, literacy is no longer limited to the ability to read and write but encompasses a broader set of competencies that enable individuals to critically locate, evaluate, and apply information effectively. As higher education shifts toward preparing learners for knowledge-based economies, there is an urgent need to foster 21st-century skills such as critical thinking, problem-solving, creativity, and information literacy (Devi & Verma, 2020; Vassilakaki & Moniarou-Papaconstaninou, 2023).

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Information literacy (IL), first formally introduced in the 1970s, has evolved from a library-centred concept into a lifelong learning competency essential in multiple domains of contemporary life (ALA, 1989). According to the ALA, information literacy involves recognizing the need for information, identifying what is required, and then locating, evaluating, and using it effectively. Over time, IL has extended beyond academic and professional contexts, proving vital for civic participation, healthcare, and personal decision-making (McCaffery et al., 2022). Closely linked to other literacies—such as media, digital, and health literacy—it provides individuals with the capacity to function competently in an increasingly complex information environment.

Health literacy, on the other hand, specifically relates to an individual's ability to access, understand, and apply health-related information to make informed health decisions (Markoff, 2004; Rudd et al., 2004). However, the advent of digital health resources and complex healthcare systems has expanded this concept into Health Information Literacy (HIL). HIL bridges the domains of IL and health literacy by emphasizing not only comprehension of medical communication but also the ability to search for, critically assess, and apply health information in practical contexts (Kassim, 2022). Evidence suggests that higher levels of HIL improve patient outcomes, foster disease prevention, and empower individuals to navigate healthcare systems more effectively (Ekoko, 2020; Vassilakaki & Moniarou-Papaconstaninou, 2023). The relevance of HIL is particularly pronounced among women, who serve as primary caregivers and decision-makers within families. Women's health knowledge has a cascading effect on maternal health, infant survival, and community well-being (Devi & Verma, 2020; Ekoko, 2020). Yet, significant disparities persist, especially in rural contexts, where women often face structural barriers including lower educational attainment, financial limitations, and inadequate healthcare infrastructure (Kassim, 2022). Studies have documented that women with low health literacy are more vulnerable to adverse pregnancy outcomes, reduced utilization of health services, and compromised child development (McCaffery et al., 2022). By contrast, women with stronger HIL demonstrate improved self-advocacy, greater autonomy in healthcare decisions, and better maternal and child health outcomes (Ekoko, 2020).

Given these realities, improving women's HIL is not only essential for individual empowerment but also for addressing systemic inequalities and achieving global commitments such as the Sustainable Development Goals (SDGs), particularly those related to health, education, and gender equality (Vassilakaki & Moniarou-Papaconstaninou, 2023). This paper therefore seeks to explore the critical role of women's health information literacy, with a special emphasis on rural populations, highlighting both its transformative potential and the consequences of neglecting it.

RESEARCH METHODOLOGY:

Objectives

- ✓ To assess the awareness of information literacy related to women's health and hygiene among students aged 18–25.
- ✓ To examine how female students seek information on women's health and hygiene.
- ✓ To identify the challenges young women face in accessing health and hygiene information.

Research Design

The present study employed a **descriptive research design** to examine the awareness, information-seeking behavior, and challenges related to women's health and hygiene among undergraduate female students of SNTD Women's University, Pune campus. A **convenience sampling technique** was used to select participants based on accessibility and willingness to participate, which was considered appropriate given the feasibility in terms of time, resources, and proximity (Etikan, Musa, & Alkassim, 2016). Data were collected through a structured questionnaire comprising both closed- and open-ended questions designed to capture students' awareness of health information literacy, their information-seeking practices, and the barriers encountered in accessing reliable information. Quantitative data were analyzed using descriptive statistics, while qualitative responses were examined thematically to generate deeper insights. The choice of a descriptive design was justified as it allowed the researcher to provide an accurate account of existing conditions without manipulating study variables (Creswell, 2014).

Sampling

This study was confined to undergraduate female students of SNTD Women's University, Pune campus. Data were collected using a convenience sampling technique, wherein participants were selected based on their accessibility and willingness to participate. Although this method did not employ additional selection criteria, it was considered suitable for the study as it facilitated the collection of data from readily available respondents, ensuring feasibility with respect to proximity, time, and resource constraints.

module aimed at enhancing health information literacy skills among women students.

Data collection tool

The study employed two primary tools for data collection: an Information Literacy Test and a structured questionnaire. The test, developed in accordance with the *Association of College and Research Libraries (ACRL) Information Literacy Competency Standards for Higher Education* (ACRL, 2000), was administered before and after the intervention to objectively assess changes in students' ability to identify, locate, evaluate, and use health-related information. The questionnaire, designed with input from a medical professional and a student counselor to ensure relevance and accuracy, explored students' awareness, knowledge, information-seeking behavior, and challenges in accessing reliable health information. It incorporated a combination of Likert-scale items to capture perceptions, multiple-choice questions to assess knowledge and preferred sources, and open-ended questions to provide deeper insights into individual experiences. Together, the two instruments enabled triangulation of data, thereby enhancing the reliability and validity of the findings and providing a comprehensive understanding of students' health information literacy (Creswell & Creswell, 2018).

Results & Discussion:

Table 1 (A) Awareness levels among students (n=334).

Awareness Level	Frequency	Percentage
High	102	30.54
Moderate	156	46.71
Low	76	22.75

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Table 1 (B) Chi-square Test Awareness levels among students (n=334).

Test	Chi-square Value	df	p-value	Interpretation
Chi-square Test of Independence	0.52	2	0.77	Not significant

The findings reveal that nearly half of the students (46.7%) demonstrated a moderate level of awareness of health information literacy, while 30.5% exhibited high awareness and 22.8% reported low awareness. This distribution suggests that although a considerable proportion of students possess some competency in identifying and using health information, only a smaller segment has achieved higher levels of proficiency, and a notable fraction still remains at risk due to limited awareness. The results further show that the majority of students fall within the moderate category, indicating the presence of foundational knowledge that could be enhanced through targeted interventions. To explore whether age influenced awareness, a Chi-square analysis was performed, comparing responses between students in different age brackets (18–21 and 22–25 years). The test did not yield a statistically significant association, suggesting that awareness levels were relatively uniform across the two age groups. This outcome highlights that chronological age within the narrow span of young adulthood is not a determining factor in shaping health information literacy. Instead, factors such as access to reliable information sources, digital exposure, and educational opportunities may play a more critical role in determining students' competencies. This finding aligns with prior research emphasizing that information literacy outcomes are less dependent on demographic variables such as age and more strongly influenced by environmental and contextual factors, including the accessibility of credible information and institutional support systems (Creswell, 2014). Moreover, studies such as McCaffery et al. (2022) have shown that even among university students, disparities in health literacy are often linked to the quality of available resources and the ability to critically evaluate them, rather than to age alone. Collectively, these results underscore the importance of educational interventions, digital training, and improved access to trustworthy health information in strengthening health information literacy among students.

Table 2 (A) Primary sources of health information utilized by students.

Source	Frequency	Percentage
Internet	142	42.51
Friends/Peers	65	19.46
Family	48	14.37
Medical Professionals	57	17.07
Books/Print Media	22	6.59

Table 2 (B) Independent Samples t-test sources of health information utilized by students.

	Test	Value	df	p-value	Interpretation
Independent Samples t-test	Internet Use vs Awareness Score	0.86	332	0.389	Not significant

The analysis of information-seeking behavior revealed that the Internet was the most frequently used source of health-related information (42.5%), followed by peers (19.5%), medical professionals (17.1%), family members (14.4%), and books or print media (6.6%). This pattern underscores the central role of digital platforms in shaping

young women’s access to health knowledge, reflecting broader global trends in which online media has become the primary channel for health communication among youth populations. However, the relatively lower reliance on authoritative sources such as healthcare professionals and print media highlights a potential gap in accessing evidence-based, credible information. Instead, the reliance on informal peer networks and family members as secondary sources suggests that social interactions continue to influence health knowledge, particularly in contexts where formal health education may be limited. To further examine whether dependence on the Internet as a source of health information was associated with better awareness, an independent samples t-test was conducted comparing awareness scores of Internet users and non-users. The results showed no statistically significant difference ($t = 0.86$, $df = 332$, $p = 0.389$), indicating that Internet use alone did not translate into higher levels of health information literacy. This finding suggests that while students may have wide access to digital information, the lack of critical evaluation skills and information filtering mechanisms limits their ability to transform this access into meaningful knowledge.

These results are consistent with earlier studies that caution against over-reliance on the Internet for health information. Diviani et al. (2015), in a systematic review, reported that individuals with low health literacy often struggle to assess the quality of online information, leaving them vulnerable to misinformation. Similarly, McCaffery et al. (2022) found that during the COVID-19 pandemic, students with inadequate health literacy were more susceptible to misinformation despite their extensive use of digital resources. Taken together, these findings emphasize that access to online platforms, while crucial, must be supplemented by the development of critical appraisal skills, digital literacy training, and the integration of health information literacy into educational programs to ensure that students can effectively navigate and benefit from the vast amount of health information available online.

Table 3 (A) Main challenges students reported in accessing women’s health and hygiene information.

Challenge	Frequency	Percentage
Lack of Reliable Sources	96	28.74
Financial Constraints	58	17.37
Limited Digital Skills	72	21.56
Cultural Barriers	54	16.17
Time Constraints	54	16.17

Table 3 (B) Multiple Regression Main challenges students reported in accessing women’s health and hygiene information.

		Test	Value	df	p-value	Interpretation
Multiple Regression	Awareness Score	Number of Challenges	0.93	3, 330	0.425	Not significant

The analysis of barriers encountered by students in accessing women’s health and hygiene information revealed several recurring themes. The most frequently cited challenge was the lack of reliable sources (28.7%), reflecting difficulties in identifying trustworthy information amidst the abundance of online and informal content. This was

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followed by limited digital skills (21.6%), which underscores the importance of not only access to technology but also the competencies required to navigate digital environments effectively. Other notable barriers included financial constraints (17.4%), which may restrict access to healthcare services or paid information resources, as well as cultural barriers (16.2%) and time constraints (16.2%), both of which indicate the influence of socio-cultural expectations and competing academic or personal responsibilities on health-seeking behaviors.

To assess whether these barriers significantly influenced students' awareness levels, a regression analysis was conducted with the number of challenges reported as predictors of awareness. The model was not statistically significant ($F(3, 330) = 0.93, p = 0.425$), indicating that while such challenges are pervasive, they do not independently account for variations in health information literacy. This suggests that awareness and literacy are shaped by a broader set of structural and contextual determinants, including access to education, institutional support, and the availability of health promotion initiatives, rather than by isolated individual-level barriers alone. These findings are consistent with Ekoko (2020), who observed that women in rural Nigeria, despite reporting significant difficulties in accessing formal healthcare information, relied heavily on informal and traditional sources, reflecting a context-driven pattern of information-seeking. Similarly, Nutbeam (2008) argued that health literacy is not merely the product of individual knowledge and skills but is also determined by the social, cultural, and institutional environments in which individuals operate. The convergence of these perspectives highlights that while challenges such as digital limitations or financial barriers are important, sustainable improvements in women's health information literacy require systemic interventions—such as enhancing institutional access to credible resources, embedding digital health literacy into curricula, and addressing cultural stigmas surrounding women's health topics.

CONCLUSION

The study highlights critical insights into the health information literacy of undergraduate female students. Nearly half of the participants demonstrated moderate awareness, with only a smaller proportion achieving high levels, indicating a pressing need for targeted interventions to strengthen foundational competencies. Chi-square analysis confirmed that age was not a significant factor, underscoring the greater importance of access and contextual exposure over demographic characteristics in shaping literacy outcomes. With respect to information-seeking behavior, the Internet emerged as the predominant source of health-related knowledge; however, the independent samples t-test revealed no significant difference in awareness between Internet users and non-users. This points to a gap between access and effective utilization, reflecting the necessity of equipping students with critical evaluation skills to navigate the digital information landscape effectively. Analysis of challenges showed that while students frequently reported barriers such as unreliable sources, limited digital skills, and socio-cultural constraints, regression analysis demonstrated that these challenges alone did not significantly predict variations in awareness. Instead, the findings align with prior research emphasizing the broader influence of systemic, cultural, and institutional contexts in shaping women's health information literacy (Creswell, 2014; Diviani et al., 2015; McCaffery et al., 2022; Ekoko, 2020; Nutbeam, 2008). Collectively, these results call for holistic and sustainable strategies—such as embedding digital and health literacy into curricula, improving institutional access to credible resources, and addressing socio-cultural barriers—to empower young women with the competencies necessary for informed health decision-making.

REFERENCES

- [1] American Library Association. (1989). *Presidential Committee on Information Literacy: Final report*. Association of College & Research Libraries. <https://www.ala.org/acrl/publications/whitepapers/presidential>
- [2] Association of College and Research Libraries (ACRL). (2000). *Information literacy competency standards for higher education*. American Library Association. <https://alair.ala.org/handle/11213/7668>
- [3] Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.
- [4] Devi, G., & Verma, S. (2020). Status of Health Literacy among Rural Women to Community Health Center of Sagar Region: A Survey. *Indian Journal of Public Health Research & Development*, 2(6), 572-576. 6.
- [5] Devi, S., & Verma, R. (2020). Health literacy awareness among rural women. *Journal of Information Literacy and Awareness*, 14(2), 56–64.
- [6] Ekoko, O. N. (2020). An assessment of health information literacy among rural women in Delta State, Nigeria. *Library Philosophy and Practice*, 3533, 1–16. <https://digitalcommons.unl.edu/libphilprac/3533>
- [7] Kassim, M. (2022). Health information literacy among rural women: A descriptive survey. *Journal of Information Literacy*, 16(1), 34–50. <https://doi.org/10.11645/16.1.3022>
- [8] Loksha, L., & Adithya Kumari, H. (2023). Information literacy: A prerequisite for academic excellence in higher education. *Journal of Library and Information Science*, 18(3), 112–121.
- [9] M., Loksha & H., Adithya Kumari. (2023). Information Literacy Skills among Students and Faculty Members of Constituent Colleges in Tumkur University: A Study. *International Journal of Research in Library Science*. 9. 147-158. 10.26761/ijrls.9.1.2023.1608.
- [10] Markoff, A. (Ed.). (2004). *Health literacy: A prescription to end confusion*. National Academies Press. <https://doi.org/10.17226/10883>
- [11] McCaffery, K. J., Dodd, R. H., Cvejic, E., Ayrek, J., Batcup, C., Isautier, J. M., Copp, T., Bonner, C., Pickles, K., Nickel, B., Dakin, T., Cornell, S., & Wolf, M. S. (2020). Health literacy and disparities in COVID-19-related knowledge, attitudes, beliefs and behaviours in Australia. *Public health research & practice*, 30(4), 30342012. <https://doi.org/10.17061/phrp30342012>
- [12] McCaffery, K., Dodd, R. H., Cvejic, E., Ayrek, J., Batcup, C., Isautier, J. M. J., Copp, T., Bonner, C., Pickles, K., Nickel, B., Dakin, T., Cornell, S., Wolf, M. S., & Parker, R. M. (2022). Health literacy and disparities in COVID-19-related knowledge, attitudes, beliefs, and behaviours in Australia. *BMC Public Health*, 22(1), 144–158. <https://doi.org/10.1186/s12889-022-12563-1>
- [13] Rudd, R. E., Kirsch, I., & Yamamoto, K. (2004). Literacy and health in America. In A. Markoff (Ed.), *Health literacy: A prescription to end confusion* (pp. 31–51). National Academies Press. <https://doi.org/10.17226/10883>
- [14] Vassilakaki, E., & Moniarou-Papaconstantinou, V. (2023). The role of librarians in promoting health literacy: A systematic review. *Health Information & Libraries Journal*, 40(2), 123–138. <https://doi.org/10.1111/hir.12489>
- [15] Vassilakaki, Evgenia & Moniarou-Papaconstantinou, Valentini. (2022). Librarians' support in improving health literacy: A systematic literature review. *Journal of Librarianship and Information Science*. 55. 096100062210937. 10.1177/09610006221093794.