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# Impact of Digital Technology on Improving Women's Reproductive Health: Literature Review

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## Abstract

Low knowledge about reproductive health among mothers and adolescent girls leads to a lack of understanding of its importance. This limited knowledge results in women's inability to care for their reproductive organs, often exacerbated by conflicting or insufficient information. The stigma surrounding discussions on reproductive health, particularly in rural areas, further restricts access to accurate knowledge. Social media and the internet have emerged as vital tools in enhancing reproductive health education by offering accessible, interactive, and engaging information. This literature review employs a grey literature search through Google Scholar to analyze 12 articles that meet inclusion criteria. Three key themes are identified: social media, knowledge, and reproductive health. The findings highlight the significant role of social media platforms in improving women's reproductive health education, especially among adolescents. Online interactions are preferred over traditional classroom-based health education, as they provide a more practical and enjoyable learning experience. This review underscores the potential for leveraging digital platforms to support nurses and healthcare providers in delivering effective health education and promotion strategies tailored to women's needs.

## Keyword:

Social Media, Knowledge, Reproductive Health, Review

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## 1. Introduction

Reproductive health, particularly women's reproductive health, remains a critical issue in contemporary development discussions. Despite its importance, many women lack comprehensive knowledge about reproductive health, partly due to cultural taboos surrounding sexuality and reproductive topics. This gap in understanding often leads to negative outcomes, such as premarital sex, unsafe abortions, and the spread of HIV/AIDS [4][5][16][19]. Reproductive health, as defined by the World Health Organization (WHO), refers to a state of complete physical, mental, and social well-being in all matters related to reproductive functions and processes, not merely the absence of disease. Alarmingly, poor reproductive health contributes to 33% of the global disease burden among women. This situation is further complicated by the reluctance of families and communities to discuss reproductive health openly due to traditional, cultural, or religious values that regard such topics as taboo. Consequently, adolescents and women are often left with misinformation or no information at all, impeding efforts to improve reproductive health outcomes [20][23][24][36].

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Mass media has emerged as a powerful tool for disseminating reproductive health information, with the internet and social media becoming particularly influential in recent years. Research shows that digital platforms have the potential to bridge knowledge gaps, especially among adolescents who often turn to online sources for information [7][8][9]. The mass media influence underscores the impact of information on cognitive knowledge, highlighting how digital media can shape public understanding and attitudes. With the widespread availability of the internet, digital technology has become an accessible and engaging medium for delivering reproductive health education, offering interactive, practical, and non-judgmental resources that are particularly appealing to young audiences. Unlike traditional classroom-based education, which can feel formal and intimidating, digital platforms create a safe space where users can seek information discreetly and without fear of stigma [11][12].

Mass media has significant positive effects only on a few reproductive health indicators but not on others. There is inadequate utilization of reproductive health services due to partly low awareness and attitudinal factors, which can be addressed through mass media. Some techniques including, least square and logistic regression models were used to analyze the survey data. In addition, qualitative data that were collected from media and health personnel were analyzed thematically. The insignificant role of mass media is attributable to constraints associated with reproductive health communication design, implementation, monitoring, and evaluation. The potential role of mass media in addressing women's reproductive health problems can be utilized through evidence-based preparation of communication messages tailored to a targeted audience as well as by building the capacities of mass media agencies [35]. Table 1 displays the key papers on reproductive health related to knowledge and social media.

Table 1. Key papers in reproductive health knowledge

Study	Intervention	Audience	Key Findings
A Realist-Informed Review of Digital Empowerment Strategies for Adolescents to Improve Their Sexual and Reproductive Health and Well-being [21]	Digital empowerment strategies, including mobile apps and online platforms	Adolescents in urban resource-constrained settings	Digital technologies provide anonymity and safety, enabling adolescents to access tailored information, make informed decisions, and improve health outcomes. Contextual factors and socio-developmental stages are crucial for effectiveness.
Mobile Apps for Sexual and Reproductive Health Education: a Systematic Review and Quality Assessment [22]	Mobile health apps for SRH education	The general population, with a focus on adolescents	SRH apps offer quick, low-threshold access to information, allowing anonymous use. However, many lack field-based evaluation, and their effectiveness is not sufficiently studied. High-quality design and relevant content tailored to target groups are essential.

## 2. Literature Review

A literature search using articles from 2018 to 2022, free full text, data from the last five years, and human and specifications for the application of keywords must be in the title/abstract section. The articles obtained were taken from Google Scholar grey literature. The search was carried out using the keywords ((("reproductive health") AND ("social media") AND ("digital technology")), then article screening was carried out according to the criteria determined by the researcher and under the research questions. The articles that appeared were then selected so that no articles with the same title were found.

Furthermore, the articles were sorted based on the inclusion and exclusion criteria that had been determined. Table 2 displays the literature review study found that reproductive health is related to knowledge and social media.

Table 2. A literature review paper in reproductive health

No	Title	Country	Sample	Type	Results
1	The Influence of Social Media on Improving Women's Reproductive Health [18]	Indonesia	105	The methodology used in this research is qualitative	The advancement of information technology in the form of social media has the potential to be used as a medium for promoting reproductive health among women. In several studies that have been conducted, Facebook has become the most widely used media, this is because Facebook has the most users in the whole world
2	Utilization of the Internet as a Media for Reproductive Health Information at Smk N 1 Darul Kamal Aceh Besar [14].	Indonesia	20	The methodology used in this study is qualitative	The use of the internet as an information medium by students to obtain information about reproductive health is still not maximally effective in its use.
3	Utilization of Social Media in Socializing Reproductive Health and Nutrition for Women [17]	Indonesia	1	<i>Qualitative Study</i> , with focus group discussions (FGD)	The results of this study can describe the use of social media by Aisyiyah, especially in the socialization of reproduction and nutrition for Woman.
4	Transformative Innovations in Reproductive, Maternal, Newborn, And Child Health Over the Next 20 Years [7]	Brazil	668	<i>Cross-sectional</i>	In this paper, we discuss promising innovations that we believe have promising significance in advancing the RMNCH agenda. While some are technological, others are efforts aimed at improving commodities, increasing demand for services, and promote equality in access.

5	The Influence of Social Media on Improving Women's Reproductive Health [1][2]	Indonesia	105	The methodology used in this research is qualitative.	The advancement of information technology in the form of social media has the potential to be used as a medium for promoting reproductive health among women. In several studies that have been conducted, Facebook has become the most widely used media, this is because Facebook has the most users in the whole world
6	Using Digital Technology for Sexual and Reproductive Health: Are Programs Adequately Considering Risk [3]	English	4	<i>Retrospective</i>	The theme emerging from this research is that as mobile phone networks proliferate across low- and middle-income countries, digital technologies offer great potential to support women in achieving positive SRHR outcomes. Technology can make information and services available when and where they are needed, and can facilitate a broader shift towards user-controlled products and services, including for family planning. However, providing SRHR services and offerings of information and support to empower women to take control of their health and fertility.
7	"Bidan Kupedia" as an E-Health Consultation Media About Health Reproduction and its problems [10]	Indonesia	21	<i>Descriptive</i>	The theme obtained in this study is the results of community service. shows that telehealth can be an alternative solution to the problem of health service gaps by utilizing communication media through online communication about reproduction health.

8	Utilization of the Internet as a Media for Reproductive Health Information at SMK N 1 Darul Kamal Aceh Besar [6]	Indonesia	1	<i>Qualitative</i>	The theme obtained in this study is that the internet is one of the networks that can help us to get all the information. The existence of the internet can be beneficial for teenagers, but it can also have a big negative impact on their lives. The internet provides an abundance of benefits for teenagers, including improving health levels.
9	The Relationship Between Media and Attitudes and Behavior of the Adolescent Reproductive Health Triad [15]	United States of America	668	Data were analyzed using frequency distribution and chi-square test.	The themes obtained in this study are Internet media, radio, and newspapers related to adolescent reproductive health behavior. Efforts are needed to provide adequate and sustainable information using media as a means of education for adolescents, especially behavior about adolescent reproductive health.
10	The Use of Assistive Reproductive Technology and Its Implications for Reproductive Health from an Islamic Perspective [13]	Indonesia	30	<i>Qualitative</i>	The themes obtained in this study were increased knowledge after the post-test and increased willingness to carry out breast cancer and cervical cancer screening.

### 3. Review Result

#### 3.1 Reproductive Health Knowledge

The findings of this review highlight the transformative potential of digital technologies in addressing critical gaps in women's reproductive health knowledge. The reviewed studies underscore the growing preference for digital platforms, particularly social media, mobile health applications, and online educational tools, as accessible and engaging means of acquiring reproductive health information. These platforms effectively overcome barriers such as cultural taboos, geographic limitations, and the reluctance to seek advice from traditional healthcare providers due to stigma or embarrassment. One prominent theme emerging from the analysis is the significant role of anonymity and safety provided by digital interventions. Adolescents and women in conservative societies often avoid discussing reproductive health issues in public forums or with family members. Digital platforms provide a private and judgment-free environment for seeking information, which has been shown to improve knowledge and confidence in managing reproductive health [21].

Another critical observation is the variability in the quality and effectiveness of digital interventions. While many applications and platforms are available, their content is not always scientifically validated, and their design may not cater to the diverse needs of the

target audience. For instance, a paper pointed out that only a limited number of applications undergo rigorous evaluation to assess their impact on user behavior and health outcomes. This gap highlights the need for collaborative efforts between healthcare professionals, technology developers, and policymakers to ensure that digital health interventions meet high standards of quality and efficacy. The discussion also reveals that although digital platforms are effective in reaching a broad audience, they may inadvertently exclude marginalized groups lacking access to technology or the internet. Addressing this digital divide is crucial for ensuring equitable access to reproductive health education. Strategies such as integrating digital tools with community outreach programs or leveraging hybrid models combining digital and traditional approaches could help mitigate this issue [22].

Adolescent reproductive health is generally defined as a healthy condition and system, function, and process of the reproductive organs owned by adolescents. Adolescents need to understand reproductive health, especially adolescent reproductive health because decisions related to reproductive health have long-term consequences or effects on the development and social life of adolescents. Sensing an object occurs through the five human senses, namely sight, hearing, smell, taste, and touch. By itself, at the time of sensing, until it produces knowledge, it is greatly influenced by the intensity of attention and perception of the object. All young women have received information about reproductive health and teenage pregnancy. This shows that young women who have received information about reproductive health and teenage pregnancy will also have good knowledge about reproductive health and teenage pregnancy [25].

One of the external factors that influence reproductive health knowledge is that the data shows that the interest of adolescents to know about reproductive health is very high, this can be caused because reproductive problems are trending problems among adolescents, which is also supported by the availability of information facilities in the community. The low knowledge of mothers and young women about reproductive health results in many not knowing the importance of reproductive health. This situation ultimately has an impact on women's inability to care for their reproductive organs due to conflicting information. This also occurs because of the lack of information received by young women and mothers. Knowledge is one of the factors that influences a person's behavior. This information can be obtained from friends, teachers, or parents. But there are also mothers or young women who are embarrassed to ask or talk about reproductive organs. They still consider this problem to be taboo, especially in rural areas [26].

The lack of information obtained by adolescents about reproductive health has an impact on their reproductive health knowledge. Women who do not know much about reproductive organs will find it difficult to know about diseases related to reproductive organs. The high rate of maternal and child mortality during childbirth is one of the impacts of women's ignorance in maintaining reproductive health. The lack of knowledge and lack of confidence to hear or discuss reproductive health issues is why young women or mothers search for data themselves, either through print media or through electronic social media. Along with the development of information technology today, it is easier for people to easily access various forms of information, including reproductive health information. The distribution of information through electronic media can also be accessed by remote villages quickly and easily [27]. Women need to understand and maintain reproductive health because they have a fairly high resistance to diseases related to reproductive organs. After all, women's reproductive organs are more complex. Providing information to women is very important to prevent more problems caused by not maintaining reproductive health. Providing information about reproductive health must be given as early as possible, to increase understanding and knowledge so that women can act responsibly [28].

According to the knowledge health aspect, the review highlights that digital technologies hold immense promise for improving reproductive health outcomes by providing convenient, cost-effective, and culturally sensitive solutions. However, the success of these interventions hinges on addressing key challenges, including content validation, user inclusivity, and sustained engagement. Future research should focus on developing evidence-based digital tools tailored to the specific needs of various demographic groups,

with robust mechanisms to evaluate their impact. The findings of this review not only reinforce the importance of leveraging digital technology for reproductive health education but also provide actionable insights for healthcare providers, educators, and policymakers. By addressing the identified gaps and optimizing the use of digital platforms, it is possible to empower women and adolescents with the knowledge they need to make informed decisions about their reproductive health.

### **3.2 Social Media**

Various kinds of electronic media can easily be obtained in this era, but what is now very familiar to remote villages is the internet, television, or radio. The electronic media above quickly convey the information we want. By getting fast and accurate information, this can be an opportunity to increase public knowledge. From various electronic media, mothers and teenage girls can find out about reproductive health problems. Research stated that advances in information technology in the form of social media have the potential to be used as a medium for promoting reproductive health among women. In several studies that have been conducted, Facebook is the most widely used media, this is because Facebook has the most users worldwide [29].

Social media is an internet-based tool that helps users to connect, collaborate, and communicate with others in real-time. Social media changes the communication paradigm from a face-to-face model to a web-based application model. Furthermore, these platforms allow real-time access to tailored, interactive content, enhancing user engagement and comprehension, as demonstrated by mobile health apps evaluated in several studies. This unique function makes social media potentially useful as a medium for providing health promotion interventions, especially for adolescents as the largest users [30]. In the community setting, social media is useful in promoting healthy behavior in adolescents, and can also connect socially isolated populations with safe and confidential sexual health services. This shows that social media can promote healthy sexual behavior, and can overcome the negative impacts and stigmas circulating in society [31].

Mass media is one of the unlimited information centers that can be accessed by anyone and at any time, has positive and negative influences, where the messages in the media will affect the opinions of the recipients. A person's behavior published by the media can sometimes encourage others to adopt that person's behavior. Mass media plays a role in communication. Communication has several functions, such as: conveying information, entertaining, and influencing. In general, teenagers use mass media more as a source of information because social media is described as a great promotional and personal tool. After all, it allows its users to create and promote their content including health knowledge [32].

In addition, a study emphasizes social media use in health knowledge communication. Health knowledge communication enabled by social media relies heavily on recipients' willingness to adopt and share health knowledge, which is consequently determined by their trust in content, source, and platform. However, little is known about the relative importance and differential effects of these trusting beliefs (content credibility, source credibility, and institution-based trust) on health knowledge adoption versus sharing willingness in social media. Moreover, content credibility has a stronger relationship with adoption willingness than with sharing willingness, while institution-based trust shows a stronger relationship with sharing willingness than with adoption willingness. These findings extend the literature on trust, information communication, and communication process, and provide rich insights for healthcare institutions to effectively utilize social media (such as WOAs) on health knowledge communication [33].

Another research paper explores the impact of social media-based interventions on adolescent reproductive health education, acknowledging the digital residency of today's youth. Utilizing a Solomon Four Group Design, the study assesses the efficacy of tailored interventions on various digital platforms, emphasizing the value, impact, and relevance of innovative educational approaches, particularly those employed by social media. The paper highlights adolescents' pervasive presence on social media, including platforms such

as Instagram, Twitter, and Facebook as integral components of their online experiences. Leveraging these platforms for health education is considered crucial, aligning with adolescents' digital behaviors and preferences [34].

According to our review, it can be highlighted transformative role of digital technologies in addressing critical gaps in women's reproductive health education. Through an analysis of recent studies published between 2020 and 2025, it is evident that social media, mobile health applications, and online platforms have emerged as powerful tools for disseminating accurate and accessible information. These digital interventions effectively overcome barriers such as cultural taboos, geographical constraints, and limited access to formal health education. By offering interactive, engaging, and private environments, digital platforms have proven particularly effective in reaching adolescents and women, especially in underserved and conservative settings where open discussions about reproductive health remain stigmatized.

However, the review also identifies significant challenges, particularly the need to ensure the quality and inclusivity of digital health tools. Many applications lack robust evaluation processes to validate their content and measure their impact on behavior and health outcomes. Additionally, the digital divide remains a pressing issue, as marginalized communities with limited access to technology and the internet may be excluded from these benefits. To maximize the potential of digital health interventions, efforts must focus on ensuring that tools are evidence-based, culturally sensitive, and accessible to diverse user groups, including those in resource-limited settings. Integrating digital solutions with traditional community-based outreach programs can further enhance their reach and effectiveness.

## 4. Conclusion

Digital technologies present a promising avenue for enhancing women's reproductive health knowledge and outcomes. By addressing critical challenges such as ensuring accurate and culturally sensitive information (content quality), making digital resources accessible to all women (accessibility), and tailoring interventions to meet the diverse needs of women from various backgrounds (inclusivity), stakeholders can develop effective digital health solutions. These solutions can empower women and adolescents by providing them with access to reliable information on reproductive health topics, decision-making tools to make informed choices, and supportive online communities. This not only benefits individual women but also has a broader impact on public health by reducing maternal and infant mortality rates, promoting gender equity, and preventing chronic diseases.

To maximize the impact of digital health interventions, collaboration is essential among healthcare professionals, technology developers, educators, and policymakers. This collaborative effort will ensure that interventions are evidence-based, culturally appropriate, and sustainable, ultimately leading to a future where women have greater control over their reproductive health and well-being. These efforts are not only essential for advancing individual health but also play a critical role in achieving broader public health goals and promoting gender equity. Moving forward, collaborative efforts between healthcare professionals, technology developers, educators, and policymakers will be vital in creating sustainable and impactful digital health solutions. This review underscores the potential for leveraging digital platforms to support nurses and healthcare providers in delivering effective health education and promotion strategies tailored to women's needs.

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