Jurnal Kesehatan
Vol. 16, No. 3, Desember 2023, pp. 224-233
p-ISSN: 1979-7621, e-ISSN: 2620-7761, DOI: 10.23917/jk.v16i3.2089

Reflective Study of Information Technology Utilization in Maternal Anemia Prevention Programs

Shania Salsabilla Alamsyah[1], Yanuar Fajrul Falah[1], Ananda Arum Dwi Puspita Sari[3], Nur Ayu Sekar Arum Sari[4], Izzatul Arifah[5*]

[1-5]Prodi Kesehatan Masyarakat, Fakultas Ilmu Kesehatan, Universitas Muhammadiyah Surakarta

How to cite: Salsabilla alamsyah, S., Fajrul Falah, Y., Arum Dwi Puspita Sari, A., Ayu Sekar Arum Sari, N., & Arifah, I. Reflective Study of Information Technology Utilization in Maternal Anemia Prevention Programs. *Jurnal Kesehatan*, *16*(3), 224–234. https://doi.org/10.23917/jk.v16i3.2089

Article Information

Article History:
Submission: July 4, 2023
Revision: September 14, 2023
Acceptance: November 2, 2023

Keywords: Anemia, pregnant women, anemia prevention, information technology, program evaluation

ABSTRACT

Introduction: Anemia is one of the country's top health concerns that must be addressed immediately. The use of information technology (IT) in anemia prevention programs has received little attention in Indonesia. The purpose of the study was to reflect on the experience and consider the limitations and challenges encountered by the team while conducting an IT-based maternal anemia prevention program in Puskesmas Sangkrah, Surakarta. **Method**: this study was a qualitative study using a case study approach. The data collection methods were reflective writing and interviews. Data validity is achieved through the triangulation of data sources. Content analysis is being used to analyze data. **Results**: for health providers and participants of the program, it is a new challenging experience of online educational sessions. However, some obstacles and challenges are felt, including the lack of enthusiasm of participants during online education sessions, the lack of engagement between managers and participants in implementing online education compared to offline, and technical constraints from the application. **Conclusion**: the utilization of information technology in the maternal anemia prevention program has produced positive results, but there are still challenges that can be overcome if the approach is applied to other health programs.

Corresponding Authors: (*)
Prodi Kesehatan Masyarakat, Fakultas Ilmu Kesehatan, Universitas Muhammadiyah Surakarta, Jl. A. Yani Tromol Pos I, Pabelan Kartasura, Sukoharjo 57169, Indonesia
Email: ia523@ums.ac.id

INTRODUCTION

The prevalence of anemia remains high, with 43.9% of pregnant women worldwide suffering from anemia. Anemia was estimated to affect 49.4% of pregnant women in Asia, 59.1% in Africa, 28.1% in America, and 26.1% in Europe. In developing countries, about 40% of maternal deaths were due to anemia (Munawaroh & PN Situmorang, 2021). The high prevalence of anemia in pregnant women is a problem that the Indonesian

government faces. According to WHO data from 2018, anemia in pregnancy is a significant public health issue in developing countries, with high morbidity and mortality rates among pregnant women. According to the 2018 Basic Health Research (Kemenkes, 2018) anemia in pregnant women in Indonesia was 48.9%.

In this regard, the government has implemented a program to prevent anemia in pregnant women by organizing a 90-day supply of Fe tablets (Amieratunnisa et al., 2022; Safitri et al., 2019). The national coverage of pregnant women taking 90 Fe tablets during pregnancy is 33.3% (Juwita, 2018). Pregnant women who consumed fewer than 90 Fe tablets were 34.4%, while pregnant women who did not consume 90 Fe tablets were 21.4%3. In Indonesia, coverage of administering Iron and Folic Acid (IFA) supplementation to pregnant women has exceeded the national target of 95%. However, according to Riskesdas data from 2018, only 38.1% of pregnant women who reported receiving iron tablets consumed iron tablets (Kemenkes, 2018). This demonstrates a disparity in meeting the national target among pregnant women who consume iron. There is already a supplementation program to address the anemia issue, but it is less effective, possibly due to the lack of monitoring and reminder support (Falah et al., 2022; Juliana Sinaga & Hasanah, 2019).

Some studies suggest using the Information Technology (IT) program to increase adherence to consuming medicine (Cattamanchi et al., 2021). A study in Palangka Raya City (Central Kalimantan Province) use Short Message Service (SMS) as a reminder to improve adherence to pulmonary TB treatment (Carsita & Windiramadhan, 2020; Dwi et al., 2019) Other study employs IT support, specifically in the development of an Oral Contraception Medication Reminder application, which is designed to assist contraception pill acceptors (Tinggi et al., 2021) This android application service effectively increases adherence to taking birth control pills by assisting in regulating pill-taking schedules. Of course, this innovative effort can be used in place of the anemia prevention program to increase compliance with IFA consumption.

The use of information technology in the health sector has begun to be widely adopted for education and the resolution of health problems (Putra et al., 2016). One of them is the community service carried out by the Students Creativity Program or PKM-PM team of Universitas Muhammadiyah Surakarta at Sangkrah Health Center in Surakarta City. This program is carried out by four students from the UMS Public Health study program and a student from the UMS Informatics Engineering Education study program as a provider of an IT-based maternal anemia prevention program. It involves ten health workers, including four nutritionists and six midwives at Sangkrah Health Center as program managers, with 80 pregnant women as the participants at Sangkrah Health Center.

The information technology used for the anemia prevention program at the Sangkrah Health Center is social media, specifically Whatsapp Group (WAG), to conduct online education called Support Group, and then use an app on a smartphone called ANEDOC APP. The program was implemented from June to September 2021. The Support Group Program was a 10-week online class for pregnant women in a Whatsapp group. According to research, using Whatsapp group as the media is recommended because it is easier to use and less expensive; (Nadifah, 2022; Setyani & Sumardiyono, 2021). Another program was using ANEDOC APP to increase compliance with IFA consumption. The ANEDOC APP is an Android-based application that provides reminders, education, and monitoring features for people who drink IFA supplements. Based on an evaluation of 42 pregnant women's community service activities, it was discovered that the presence of pregnant women in each educational session at the Support Group was not 100% during the three-month service period. However, all pregnant women were WhatsApp group members. Furthermore, only a few pregnant women use the ANEDOC APP application and are regularly monitored via the ANEDOC APP.

Using IT to deal with health issues can provide many benefits, but getting people to adapt to this use of IT in their daily lives can be difficult (Militello et al., 2021; Nahariah, 2022). The Support Group program has many participants in our service activities. Still, during its implementation, many participants needed to be more enthusiastic and participate passively in group discussions. Meanwhile, the community is less enthusiastic about the ANEDOC APP program, with only a few users using the application. According to download statistics from 80 pregnant women, only 26% downloaded the ANEDOC APP feature, and 5% routinely confirmed taking IFA supplements. Consequently, it is challenging to evaluate the program's effectiveness. Moreover, this study intended to: 1) Reflect on the team's experience in organizing IT-based maternal anemia prevention programs; 2) Evaluate barriers and obstacles to implementing IT-based anemia prevention programs; 3) Recommend actions that need to be taken in the implementation of IT in anemia prevention programs for the provider.

LITERATURE REVIEW

Pregnant women who took IFA supplementation irregularly showed a higher chance of developing anemia. Therefore, an intervention in pregnancy anemia prevention using social media like online pregnant classes and using mobile applications has the potential to result in increased optimum results in anemia prevention. In addition, the use of social media is a potential medium for education. A Randomized Controlled Trial study in India using Facebook Ad Manager found that the use of social media for the prevention of anemia in women of childbearing age shows benefits in being able to involve large participants and can increase knowledge of several things about anemia prevention (Diamond-Smith et al., 2020).

The use of social media and information technology for health-related efforts delivered via mobile phones is called mHealth (WHO, 2018). The results of a systematic study on the use of mHealth in efforts to improve maternal and child health show that there is evidence of the effectiveness of mHealth interventions implemented in developing countries, although it is still rarely implemented. The mHealth interventions carried out by the majority are sending short messages, voice messages, and using applications. The results of the study show that text messaging interventions are more suitable for repetitive behavior interventions such as ANC visits (Lee et al., 2016; Mildon & Sellen, 2019). The use of information technology and distance education in low and middle-income countries still has many challenges, especially related to the user's adaptation in

METHOD

This research is a qualitative study of the information technology program for anemia prevention in pregnant women for six months using a case study approach. The activity occurred between December 9, 2021, and January 21, 2022. This study had ethical approval from the Health Research Ethics Committee, Faculty of Medicine, Muhammadiyah Surakarta University (4541/B.2/KEPK-FKUMS/X/2022).

The Main Informant (MI) is the program provider of an anemia prevention health program using IT in Puskesmas Sangkrah (initials: MI1, MI2, MI3, MI4) as program providers, two Sangkrah Community Health Center midwives (initials: MI5, MI6) as health providers representatives, and two Triangulation Informants (TI), that is pregnant women from Sangkrah Health Center (initials: TI7, TI8) as representatives of program participants who were selected by purposive sampling technique.

The team collected data through reflection and interviews. Data collection of the reflective experience of the providers was conducted by writing reflections about their experiences, shortcomings, and obstacles in implementing the program. The reflection was carried out while reviewing historical documents of program activities. These documents

include chat transcripts with the head of Sangkrah Primary Health Centre, health providers, and participants; chat transcripts from support groups and chat transcripts from support group evaluations with healthcare workers; photos and videos shot during the program. The data collection technique used for collecting information from health providers and participants was an interview. Interviews were conducted via Whatsapp chat to review experiences, shortcomings, and obstacles encountered during the program. Efforts were made to improve the validity of the activity data by triangulating sources with the help of two pregnant women who served as triangulation informants. The content analysis technique was used to analyze the data. The following stage is the analysis of the narrative data. At this stage, we analyze the written data, condense the narrative data, and then interpret the responses to arrive at conclusions.

RESULT AND DISCUSSION

Table 1 describes the characteristics of respondents in this activity. There was a total of eight people involved in this activity. Most of the program's providers of this activity are female, 21 years old, and students. Most of the program's providers of this activity were 30 years old, female, have a bachelor's degree, and work as lecturers. Most participants in this activity were 36 years old, five months pregnant, and housewives.

Table 1. Characteristics of Respondents

Initial	Age	Sex	Education	Job
MI 1	20	Female	High school graduate	Student
MI 2	21	Female	High school graduate	Student
MI 3	21	Female	High school graduate	Student
MI 4	20	Male	High school graduate	Student
MI 5	28	Female	Diploma	Midwife
MI 6	36	Female	Diploma	Midwife
TI 7	36	Female	High school graduate	Housewife
TI 8	40	Female	High school graduate	Housewife

Reflection on program implementation for program's provider.

The program's provider gained memorable experiences such as experience solving pregnancy problems to experience creating applications and websites. Furthermore, the providers can learn about the real context of implementing new health programs in the community.

"*When organizing this service program, the most memorable experience for me was uploading the applications to the Play Store, and I also got an idea of what the conditions of the job market were like*" (MI 1)

"*It's a bit complicated because poor planning has resulted in additional features in the application at the end of the timeline for making the application, making the next timeline tight and shortened.*" (MI 2)

The program's provider is also facing challenges in implementing this service. According to these reflections, the program's obstacles are related to the limited distance and time, too many participants, and poor planning, which makes it difficult for the program's provider. This can be overcome by more optimal program planning, beginning with a detailed discussion of the participants, participants' conditions, and the timeline.

During the program's implementation, the provider discovered some issues, including the lack of participants' responses during education sessions. Participants only downloaded the ANEDOC APP without accessing it, and a disparity between the number of participants monitored on the monitoring website and the number of participants who confirmed they had taken the IFA tablets on the ANEDOC APP.

"*It's upsetting because no one asked questions and no one responded in some question and answer sessions, it seems that pregnant women are not enthusiastic about our program*." (MI 3)

"*I saw the monitoring website and many pregnant women had logged in but few pregnant women confirmed that they had taken the IFA tablets when the alarm sounded, and when I asked why it is because they still didn't understand how to use the application*" (MI 4)

Reflection on program implementation for health providers

Midwives or health providers have benefited from the programs as the implementation of the ANEDOC APP program can help them monitor the IFA tablet consumption of the participants. This is accomplished by training the participants to use the application more frequently so that they become accustomed to it. The Support Group program makes a new way of communicating and educating the participants.

"*Wow, this has helped us, madam; we can easily communicate with pregnant women and monitor those who are taking tablets and those who aren't.*" *(MI 6)*

"*...the tutorial for the application used was also simple, but it may be difficult for older users. But there were pregnant women in the previous program who understood what it was used for.*" (MI 5)

Health providers face additional challenges in implementing the program, such as being overburdened and unfamiliar with the online system. Of course, managing this community service program will drain the health providers' time, particularly the Support Group program, which is carried out outside the manager's working hours. So that they had obstacles in managing this education session because it took their time for after-office-hour activities such as caring for toddlers, taking care of patients who consult outside of working hours, and taking care of the household.

"*Honestly, ma'am, I'm struggling because at home there are still young kids, so when I get home, I take care of the kids and the house, so for the Support Group yesterday I couldn't contribute much.*" (MI 5)

"*Sometimes I have patients who want to consult me from the afternoon until the evening, so I sometimes respond slowly*," (MI 6)

It is more effective to have it offline because the midwife feels more able to persuade the pregnant mother if it is offline" (MI 6)

"*If it is online, some are good, some are not. Due to the circumstances, yesterday's pregnancy class was canceled, and there were other restrictions during the pandemic. At that time, using the internet was acceptable, but for socialization, sometimes some things didn't work out*." (MI 5)

Reflection on the implemented program for the program participants

Pregnant women as program participants feel the benefits of the program. This program helps them learn more about pregnancy-related issues, and communicate with midwives. Participants who use the ANEDOC APP application are assisted in being reminded to take IFA tablets and educated through the application's health messages.

"*It helps because I can share knowledge and ask questions at the same time in the same group, if there is any information at the health center, I will know,*" (TI 7)

"*With the support group, it is easier for me to communicate with the midwife.*" (TI 8)

"*The application is very helpful, ma'am because I am the type of person who forgets to take tablets. There is also a health message in the application, ma'am, if you want to confirm that I have taken it, that also adds to my knowledge*." (TI 7)

"*...mobile phones that I share with my husband and children, making it impossible for me to participate in online classes for pregnant women.*" (TI 7)

"*I frequently only skimmed during my online classes because they conflicted with my working hours. So, I'm less focused.*" (TI 7)

"*Sorry, ma'am, but I have to take care of the house and the young kids as well, so I can't always hold the phone in my hand.*" (TI 8)

"*However, because of the data packets, memory, and the fact that I'm not very tech-savvy, it is more effective offline.*" (TI 8)

Evaluation: Improvement in project implementation time

The Support Group's implementation time is determined by the agreement between the health providers and the participants. Pregnant women must be grouped according to their availability because not all of them have free time at the designated time due to their respective activities.

"*...asking once again precise hours of implementation to midwives and nutrition presenters as participants so that they find free time if they are free*" (MI 2)

Evaluation: Better program planning

Time constraints also result in poor program planning, which can hinder the program's efficient operation. For example, the ANEDOC APP application process takes a lot of time, it's resulted in few members who are eligible to submit applications. The use of technology in this health program needs a thorough survey of pregnant women (age, education, socioeconomic status) before the program's planning process. This ensures that participants' support and compatibility with the criteria needed and limits the technical barrier in adopting IT-based health programs.

"*The programs in the application are planned more meticulously so that we can know how to make processer and ensures-ding programs to the application earlier so that they don't get stuck at the end. given offline instruction on how to use applications*" (MI 4)

Based on the results of the interviews, several factors influence the success of prevention programs using information technology in the community, including differences in individual characteristics in terms of participants' parity status, hours of work, socioeconomic status, and education level. The differences make them have different needs for each education schedule and media suitable for them. This is consistent with the research of Sabarudin et al., (2020); Turhusna & Solatun, (2020) that showed the characteristics of individual traits make the differences in understanding a leaflet or video material. People's understanding capacity is undoubtedly different, and the tendency of interest in a given material is also different; some prefer material presented in written form, some require image visualization, and some prefer image and audio visualization (Citra Meisheila et al., 2022; Prasetyowati et al., 2019).

The Support Group as other online ANC classes, were similar to teleconsulting. Previous studies in Canada found many clinicians and other health practitioners reported that the onset of the COVID-19 pandemic created many unexpected changes and uncertainties that were not only stressful but delayed their eagerness to shift to teleconsulting or telepractice (Fong et al., 2021; Kwok et al., 2022). This condition happened to other professionals (nurses and teachers) as well in the Pandemic situation. The transition process was divided into some stages including where the health provider develops new skills preceding providing teleconsulting, doing the pilot phase of teleconsulting, and then expanding the service. The health provider that manages this online education session was not been trained to conduct online education sessions efficiently.

Health providers are also unfamiliar with the online system because the use of telemedicine weakens the connection and intimacy between healthcare workers and

pregnant women. Unquestionably, the offline system fosters a stronger emotional bond between the participant and administrator (Galle et al., 2021).

Because of the lack of closeness with the participants when using technology, most of the informants chose to conduct classes for pregnant women offline. The closeness between health workers and pregnant women will be built in online sessions if health providers are trained in advance to conduct online education (Anggi et al., 2022; Chakraborty et al., 2021). According to the findings of a study conducted by Howgego et al., (2020), online consultation sessions will be effective if health personnel are competent and trained.

Participants feel that Support Groups can increase their knowledge, which is consistent with previous research by Rahmawati et al., (2021), who found that online evaluation of pregnant women's class activities effectively increases participant knowledge. In addition, the program also helps mothers obtain information, Meirina et al., (2021) states that pregnant women have easy access to information with online media. This result is consistent with Tinggi et al., (2021), which also uses IT in health programs and finds that the program is effective in improving participants' medication adherence.

Despite the benefits, some stated they were limited in their participation in the Support Group program because participants do not have their mobile phones, so they must take turns with their husbands after work or with their children who use their smartphones to play games or attend the online session in school. Some participants stated less enthusiasm about the Support Group program as well because of their busy schedules, such as working, caring for the household, and caring for their young children.

The main factor preventing the participants from being more enthusiastic about joining the Support Group was their busy schedules. This is consistent with Aisyah, (2019) finding that many pregnant women work and are unable to participate in activities. The author recommends that future researchers should focus more on selecting dates that accommodate participants' needs and free time by categorizing participants according to the type of work they do or the number of hours they put to work each day.

There are also challenges and obstacles in the ANEDOC APP program. The challenge is that some participants said they did not understand how to use the application. Additionally, participants do not have data packages and full memory, making it impossible for them to access the application. In the future, program managers of IT-based health programs should have more consideration in the eligibility criteria of the participants who join the IT-based.

Recommendations for the next program's provider to improve IT-based health programs include making plans more structured, conducting in-depth surveys and interviews about the problems of partner communities in detail, improving program facilities to be of higher quality, when program development pays more attention to timelines, and adapting to the conditions of participants in the communities. This study was a case study of the evaluation of small-scale IT-based intervention in preventing pregnant anemia in one district during the COVID-19 pandemic. This study was not a representation of IT-based evaluation in preventing pregnancy anemia in the regular setting. Future studies need to be conducted to implement and evaluate the IT-based anemia prevention program in regular setting and bigger scale of area.

CONCLUSION

The experience of using IT in managing anemia felt by the program's provider was awe-inspiring because it was their first experience. Program managers and participants have gained new insights into how to use IT to educate pregnant women while making it enjoyable and facilitating communication between managers and participants. However, all informants agreed that there are obstacles and challenges to implementing the program.

Obstacles to using social media (WhatsApp Group) to conduct online activities, specifically a lack of enthusiasm among participants due to a lack of attachment between health workers or program managers and pregnant women as participants. As a result, the program should utilize audio-visual materials. There should be training for healthcare professionals and an agreement on everyone's schedule before starting the online education program. Concerning the use of applications on smartphones, specifically ANEDOC APP, the majority are due to technical issues with the applications that have been created (there are still many errors or bugs). In addition, if you want to implement the program by utilizing IT in other health programs, you must conduct a thorough analysis of the situation, plan the program timeline, and determine the appropriate participant criteria.

ACKNOWLEDGEMENT

Thank you to the respondents who have agreed to become our informants and help carry out this research.

REFERENCES

Aisyah, N. (2019). Hubungan Karakteristik Ibu Dan Dukungan Suami Terhadap Partisipasi Ibu Dalam Kelas Ibu Hamil di Kelurahan Harjosari Kecamatan Tebing Kabupaten Karimun. Zona Kebidanan: Program Studi Kebidanan Universitas Batam, 10(1), 13–18.

Amieratunnisa, A., Irene Kartasurya, M., Zen Rahfiludin, M., & Kesehatan Masyarakat, M. (2022). Analisis Implementasi Program Pemberian Tablet Tambah Darah Ibu Hamil Pada Masa Pandemi Covid-19 Di Wilayah Puskesmas Kabupaten Jepara. JKM (Jurnal Kesehatan Masyarakat) Cendekia Utama, 9(2), 138–153. https://doi.org/10.31596/JKM.V9I2.735

Anggi, Windayanti, H., KD, F. N., & Rusmayani, H. (2022). Peningkatan Pengetahuan Ibu Hamil TM II dan III Tentang Prenatal Yoga. Prosiding Seminar Nasional Dan CFP Kebidanan Universitas Ngudi Waluyo, 1(1), 97–103. http://callforpaper.unw.ac.id/index.php/semnasdancfpbidanunw/article/view/67

Carsita, W. N., & Windiramadhan, A. P. (2020). Pada Orang Dengan HIV/AIDS (ODHA): A Systematic Review Use of Mobile Phone Reminder as Efforts to Increase Compliance With Arv Treatment In People With HIV / AIDS (PLWHA): A Systematic Review. In Jurnal Kesehatan Indra Husada (Vol. 8, Issue 1).

Cattamanchi, A., Crowder, R., Kityamuwesi, A., Kiwanuka, N., Lamunu, M., Namale, C., Tinka, L. K., Nakate, A. S., Ggita, J., Turimumahoro, P., Babirye, D., Oyuku, D., Berger, C., Tucker, A., Patel, D., Sammann, A., Stavia, T., Dowdy, D., & Katamba, A. (2021). Digital adherence technology for tuberculosis treatment supervision: A stepped-wedge cluster-randomized trial in Uganda. PLoS Medicine, 18(5). https://doi.org/10.1371/journal.pmed.1003628

Chakraborty, P., Mittal, P., Gupta, M. S., Yadav, S., & Arora, A. (2021). Opinion of students on online education during the COVID-19 pandemic. Human Behavior and Emerging Technologies, 3(3), 357–365. https://doi.org/10.1002/hbe2.240

Citra Meisheila, A., Kurniawati, D., & Septiyono, E. A. (2022). Efektivitas Pendidikan Kesehatan Dengan Media Audio Visual Terhadap Pengetahuan Dukungan Suami Selama Kehamilan the Effectiveness of Health Education with Audio Visual Media On Husband's Support During Pregnancy. Idea Nursing Journal, XIII (1), 25.

Diamond-Smith, N., Holton, A. E., Francis, S., & Bernard, D. (2020). Addressing anemia among women in India—and informed intervention using Facebook Ad Manager. MHealth, 6, 39–39. https://doi.org/10.21037/MHEALTH-19-237A

Dwi, S., Aisyan, S., & Lazuardi, L. (2019). Efektifitas Short Message Service (SMS) Reminder Terhadap Kepatuhan Pengobatan Tuberkulosis Paru di Puskesmas Kota Palangka Raya. In Jurnal Sistem Informasi Kesehatan Masyarakat Journal of Information Systems for Public Health (Vol. 4, Issue 3).

Falah, Y. F., Alamsyah, S. S., Dwi, A. A., Sari, P., Sekar, N. A., Sari, A., Priyambudi, Z. S., Arifah, I., Masyarakat, P. K., Kesehatan, I., & Info, A. (2022). Anedoc APP: Sistem Pengingat, Pemantau, dan Edukasi Konsumsi Tablet Tambah Darah Ibu Hamil di Puskesmas Sangkrah Kota Surakarta. Jurnal Warta LPM, 25(3). http://journals.ums.ac.id/index.php/warta

Fong, R., Tsai, C. F., & Yiu, O. Y. (2021). The Implementation of Telepractice in Speech Language Pathology in Hong Kong During the COVID-19 Pandemic. Https://Home.Liebertpub.Com/Tmj, 27(1), 30–38. https://doi.org/10.1089/TMJ.2020.0223

Galle, A., Semaan, A., Huysmans, E., Audet, C., Asefa, A., Delvaux, T., Afolabi, B. B., El Ayadi, A. M., & Benova, L. (2021). A double-edged sword-telemedicine for maternal care during COVID-19: Findings from a global mixed-methods study of healthcare providers. BMJ Global Health, 6(2). https://doi.org/10.1136/bmjgh-2020-004575

Howgego, G., Sharma, I., & Kalu, P. (2020). The rules for online clinical engagement in the COVID era. In Journal of Plastic, Reconstructive and Aesthetic Surgery (Vol. 73, Issue 12, pp. 2127–2135). Churchill Livingstone. https://doi.org/10.1016/j.bjps.2020.08.045

Juliana Sinaga, R., & Hasanah, N. (2019). Determinan Kejadian Anemia Pada Ibu Hamil di Puskesmas Tunggakjati Kecamatan Karawang Barat Tahun 2019. In Jurnal Kesehatan Masyarakat (Vol. 3, Issue 2). http://ejournal.urindo.ac.id/index.php/jukmas

Juwita, R. (2018). Hubungan Konseling Dan Dukungan Keluarga Terhadap Kepatuhan Ibu Hamil Mengkonsumsi Tablet Fe. Jurnal Endurance, 3(1), 112. https://doi.org/10.22216/jen.v3i1.2383

Kementrian, K., Penelitian, B., & Kesehatan, P. (n.d.). Hasil Utama Riskesdas 2018.

Kwok, E. Y. L., Chiu, J., Rosenbaum, P., & Cunningham, B. J. (2022). The process of telepractice implementation during the COVID-19 pandemic: a narrative inquiry of preschool speech-language pathologists and assistants from one center in Canada. BMC Health Services Research, 22(1). https://doi.org/10.1186/s12913-021-07454-5

Lee, S. H., Nurmatov, U. B., Nwaru, B. I., Mukherjee, M., Grant, L., & Pagliari, C. (2016). Effectiveness of mHealth interventions for maternal, newborn and child health in low–and middle–income countries: Systematic review and meta–analysis. Journal of Global Health, 6(1). https://doi.org/10.7189/JOGH.06.010401

Meirina, E., Dewi, M. K., Tinggi, S., & Kbp, I. E. (2021). Pengaruh Teknologi Informasi Terhadap Kinerja Organisasi Universitas Kota Padang Dengan Budaya Organisasi Sebagai Variabel Moderasi. Jurnal Pundi, 05(01). https://doi.org/10.31575/jp.v5i1.325

Mildon, A., & Sellen, D. (2019). Use of mobile phones for behavior change communication to improve maternal, newborn and child health: a scoping review. Journal of Global Health, 9(2). https://doi.org/10.7189/JOGH.09.020425

Militello, L., Sezgin, E., Huang, Y., & Lin, S. (2021). Delivering perinatal health information via a voice interactive app (SMILE): Mixed methods feasibility study. JMIR Formative Research, 5(3). https://doi.org/10.2196/18240

Munawaroh, M., & PN Situmorang, P. (2021). Peran Tenaga Kesehatan, Promosi Kesehatan dan Dukungan Keluarga Terhadap Pencegahan Anemia pada Ibu Hamil. SIMFISIS Jurnal Kebidanan Indonesia, 1(2). https://doi.org/10.53801/sjki.v1i2.34

Nadifah, D. U. P. N. K. (2022). View of Potensi Penggunaan Whatsapp-Delivered Health Intervention pada Program Pencegahan dan Pengendalian Stunting di Pedesaan. Jurnal Ilmiah Permas: Jurnal Ilmiah STIKES Kendal. https://journal2.stikeskendal.ac.id/index.php/PSKM/article/view/57/41

Nahariah, N. (2022). Pemanfaatan Teknologi Pembelajaran Di Masa Pandemi Covid-19. Jurnal Al-Qiyam, 3(1), 68–72. https://doi.org/10.33648/alqiyam.v3i1.200

Prasetyowati, H., Hodijah, D. N., Ipa, M., & Hendri, J. (2019). Pengetahuan dan Karakteristik Individu: Studi Cakupan Kepatuhan Minum Obat Paska Pemberian Obat

Massal Pencegahan Filariasis di Kabupaten Tangerang. Balaba: Jurnal Litbang Pengendalian Penyakit Bersumber Binatang Banjarnegara, 179–190. https://doi.org/10.22435/blb.v15i2.1975

Putra, R., Endang, P., Astuti, S., & Azizah, D. F. (2016). Pengaruh Kemudahan dan Kemanfaatan Penggunaan Teknologi Informasi Terhadap Kinerja Karyawan (Studi pada Karyawan Kantor Pusat Universitas Brawijaya). In Jurnal Administrasi Bisnis (JAB)|Vol (Vol. 39, Issue 2).

Rahmawati, N., Silmy Nurmala, E., Berliani, C., Nurlela Aprilia, E., & Tinggi Ilmu Kesehatan Dharma Husada Bandung, S. (n.d.). Upaya Pencegahan Anemia Pada Ibu Hamil Dengan Penyuluhan Dan Pemberian Tablet Zat Besi di Desa Mandalasari Kecamatan Cikancung Kabupaten Bandung.

Sabarudin, Mahmudah, R., Ruslin, Aba, L., Nggawu, L. O., Syahbudin, Nirmala, F., Saputri, A. I., & Hasyim, M. S. (2020). Efektivitas Pemberian Edukasi secara Online melalui Media Video dan Leaflet terhadap Tingkat Pengetahuan Pencegahan Covid-19 di Kota Baubau. Jurnal Farmasi Galenika (Galenika Journal of Pharmacy) (e-Journal), 6(2). https://doi.org/10.22487/j24428744.2020.v6.i2.15253

Safitri, A., Gayatri, W., & Haerunnisa, A. D. (2019). Penerbit: Fakultas Kedokteran Universitas Muslim Indonesia. UMI Medical Journal: Jurnal Kedokteran, 4(2).

Setyani, R. A., & Sumardiyono, S. (2021). Implementation of e-SEKOCI (The Online Class of Sekolah Komplementer Cinta Ibu) in counselling midwives and pregnant women during COVID-19 pandemic. Journal of Community Empowerment for Health, 4(1), 16. https://doi.org/10.22146/jcoemph.61647

Tinggi, S., Kesehatan, I., Klaten, M., Andriani, D., & Nurul, F. (2021). Pengaruh Penggunaan Aplikasi Pengingat Minum Obat Terhadap Ketaatan Minum Obat KB Oral. Prosiding University Research Colloquium, 24–33. http://repository.urecol.org/index.php/proceeding/article/view/1248

Turhusna, D., & Solatun, S. (2020). Perbedaan Individu Dalam Proses Pembelajaran. In Jurnal Pendidikan Islam Anak Usia Dini (Vol. 2, Issue 1). https://ejournal.stitpn.ac.id/index.php/assabiqun

WHO. (2018). Classification of Digital Health Interventions v 1.0. http://who.int/reproductivehealth/topics/mhealth/en/.