

**How to Cite:**

Kartikasari, I. D., Nurhidayat, A., & Astuti, A. W. (2024). Pregnant women's knowledge related to integrated ANC services: Scoping review. *International Journal of Health Sciences*, 8(S1), 458–466. <https://doi.org/10.53730/ijhs.v8nS1.14804>

## **Pregnant women's knowledge related to integrated ANC services: Scoping review**

**Indah Dwi Kartikasari**

Midwifery Masters Student, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, Indonesia

Corresponding author email: [indahmustofa0710@gmail.com](mailto:indahmustofa0710@gmail.com)

**Asri Nurhidayat**

Master of Midwifery Lecturer, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, Indonesia

Email: [asrihidayat68@gmail.com](mailto:asrihidayat68@gmail.com)

**Andari Wuri Astuti**

Master of Midwifery Lecturer, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, Indonesia

Email: [astutiandari@unisayogya.ac.id](mailto:astutiandari@unisayogya.ac.id)

**Abstract**---Complications of pregnancy and childbirth as the highest cause of maternal death can be prevented by regular pregnancy checks through Integrated Antenatal Care (ANC). Integrated Antenatal Services provided by trained and professional health personnel can prevent and detect complications in fetuses and pregnant women early so that undesirable things do not happen in the future. WHO data shows that the importance of Integrated ANC visits has not become a top priority for some pregnant women during their pregnancies in Indonesia. This scoping review aims to review the importance of Integrated ANC knowledge for pregnant women and the needs of Integrated ANC providers. The method in this review uses a scoping review technique. The scoping review research design was chosen because the reference sources used in the research were varied, originating from several articles. The results of this study showed that after carrying out the chi-square test, it was concluded that there was a relationship between knowledge and attitudes of pregnant women regarding Integrated Pregnancy Visits (ANC) with a p value of 0.02 ( $p < 0.05$ ). The study conducted provides evidence to support the need for pregnant women in Integrated ANC services so that maternal and infant mortality rates are reduced.

**Keywords**---integrated antenatal care, knowledge, pregnant women.

## **Introduction**

Maternal and child health is the hope of the future for a nation. Maternal and child health problems in Indonesia are still not given equal attention, which is caused by social, geographical, economic and cultural diversity factors. The health of mothers and children will determine the young generation in the future (Hutapea et al., 2022). Maternal and child health indicators are MMR (Maternal Mortality Rate) and IMR (Infant Mortality Rate) (Siwi & Saputro, 2020).

Antenatal Care (ANC) is a health service provided by professional staff for mothers during pregnancy which is carried out in accordance with established standards of antenatal care. It is recommended that pregnant women visit health services twice in the first trimester, once in the second trimester and at least three times in the third trimester (Retnaningtyas & Wahyuni, 2022). According to the World Health Organization (WHO), Antenatal Care during pregnancy to detect early the occurrence of high risks to pregnancy and childbirth can also reduce maternal mortality rates and monitor the condition of the fetus. Every pregnant woman wants to have her pregnancy checked, with the aim of detecting abnormalities that may exist or will arise during the pregnancy, which can be identified quickly, and can be treated immediately before they have an adverse effect on the pregnancy by carrying out an Antenatal Care examination (Laksono et al., 2019).

Antenatal care services are health services for pregnant women by professional health workers (obstetrician and midwifery specialists, general practitioners, midwives and nurses) during their pregnancy, carried out in accordance with the standards for antenatal care stipulated in the midwifery service standards, namely measuring body weight and height, measuring blood pressure, assessing nutritional status (by measuring upper arm circumference or calculating BMI/Body Mass Index), examining uterine fundal height, determining fetal presentation and fetal heart rate (DJJ). Screening for Tetanus Toxoid (TT) immunization status and providing TT immunization if necessary, giving a minimum of 90 iron tablets to pregnant women during their pregnancy, routine and special laboratory tests, interviews including delivery planning (Megatsari et al., 2021).

## **Method**

This study uses a scoping review which is a systematic design that can be used to review the scope of the methodology, interpret the results in an evidence-based manner, map the concepts underlying the research area, sources of evidence, and types of evidence available (Tricco et al., 2018). PRISMA-ScR was chosen by researchers as a reference for preparing literature studies because it has a complete and detailed.

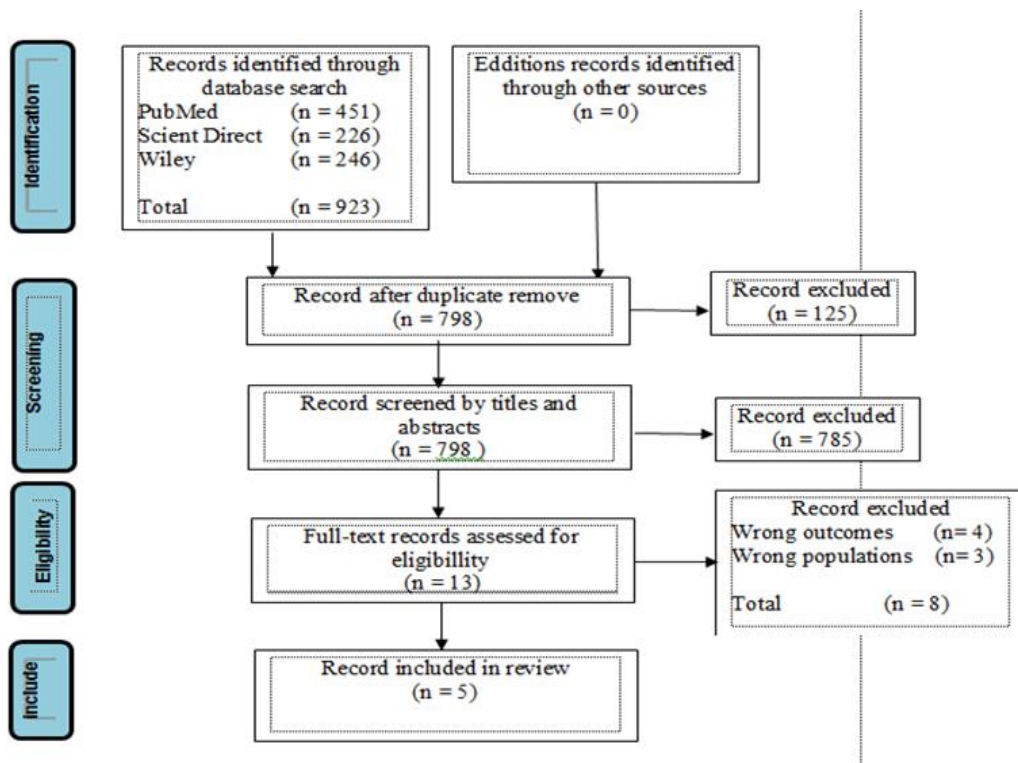


Figure 1. PRISMA-ScR Flow Chart

**Results and Discussion**

**Results**

No	Title / Author	Country	Objective	Method	Participants / Sample Size	Results
A1	The relationship between pregnant women's knowledge about integrated ANC and the frequency of ANC visits in the Kera area of Ciparay Health Center, Bandung Regency.  Author : (Rahayu, 2022)	Indonesia	Knowing the Relationship Between Pregnant Women's Knowledge About Integrated ANC and the Frequency of ANC Visits in the Ciparay Health Center Work Area.	Quantitative with Purposive Sampling research design.	57 Respondents	There is a relationship between maternal knowledge and the frequency of ANC visits with a p-value of 0.001 < 0.005. There is a relationship between pregnant women's knowledge about integrated ANC and the frequency of ANC visits with a p-value of 0.001 < 0.005
A2	Factors associated with integrated antenatal care visits for pregnant women  Author : (Wa Ode Nurul Mutia, 2022)	Indonesia	Know the factors related to Integrated antenatal care visits for pregnant women	Quantitative with correlation analysis with a cross sectional approach. Accidental sampling	47 respondents	There is a relationship significant knowledge, attitudes and choices of health facilities for pregnant women towards Integrated antenatal care visits

A3	Analysis of Pregnant Women's Knowledge of Implementation of Integrated Antenatal Care in Jampirogo Village, Sooko District, Mojokerto Regency  Author : (Retnaningtyas & Wahyuni, 2022)	Indonesia	Knowing the relationship between knowledge of pregnant women on the implementation of Integrated Antenatal Care in Jampirogo Village, Sooko District, Mojokerto Regency	Quantitative Cross Sectional Study with an accidental sampling approach Collection Data: questionnaire	39 people	There's a relationship knowledge of pregnant women regarding the implementation of Integrated Antenatal Care in Jampirogo Village, Sooko District, Mojokerto Regency..
A4	Analysis of factors influencing low visits Integrated Antenatal Care (ANC) for Pregnant Women in the Region Work at Sukodono Community Health Center, Lumajang Regency  Author : (Sivi & Saputro, 2020)	Indonesia	Factor analysis which influences the low number of Integrated Antenatal Care (ANC) visits for Pregnant Women in the Sukodono Community Health Center Working Area, Lumajang Regency.	Quantitative with cross section approach Data: questionnai re and KIA working book	30 people	Based on the results of the logistic regression analysis, we get: 1. Knowledge about antenatal care(ANC) Integrated for Pregnant Women influences the implementation of integrated ANC for patients in the Sukodono Community Health Center Working Area, Lumajang Regency 2. Parity is not influence on the implementation of integrated ANC for patients in the Sukodono Community Health Center Working Area, Lumajang Regency. 3. The support of pregnant women's husbands does not influence the implementation of integrated ANC patients in the Sukodono Community Health Center Working Area, Lumajang Regency 4. The risk of pregnancy for pregnant women influences the implementation of integrated ANC for patients in the Sukodono Community Health Center Working Area, Lumajang Regency.
A5	The effectiveness of integrated antenatal counseling on the knowledge of pregnant women at the Pabuaran Tumpeng Community	Indonesia	To determine the effectiveness of integrated antenatal counseling on knowledge about visits by pregnant women at	Quantitative with accidental sampling technique. Data:	40 pregnant women	Integrated antenatal counseling is effective in increasing pregnant women's knowledge about integrated ANC visits and there is a very real

Health Tangetang	Center,	the Tumpang center.	Pabuaran questionnai health re.	influence on the knowledge of high-risk pregnant women at the Amurang health center.
Author: (Aulya et al., 2022)				

### 1. Selection of Sources of Evidence

Based on search results from three databases using keywords via the PEOS framework. Next, a screening process was carried out using Mendeley. The article screening stages were described in the form of a Prisma Flow Chart and 5 articles were obtained that were deemed to meet the inclusion criteria and were suitable for use for assessment by conducting a Critical Appraisal using The Joanna Briggs Institute (JBI) (Muthoharoh et al., 2022)

### 2. Characteristics of Sources of Evidence

There are several characteristics of the 5 articles that have been selected, including characteristics of research methods. The articles in this research come from a developing country (Indonesia). This article has the characteristics of its research design, namely, quantitative research article with cross-sectional design, [2] quantitative research article with cross-sectional design, [3] quantitative research article with cross-sectional design, [4] quantitative research article with cross-sectional design. -sectional 5] quantitative research article with accidental sampling design.

Critical Appraisal is the process of assessing articles carefully, synthetically and relevantly. The author assessed the article using tools (JBI) (Yuriah et al., 2022). The advantage of this article is that pregnant women can know what type of medical examination needs to be done, when to do it, and the importance of having a medical examination (Yuriah & Kartini, 2022). Integrated antenatal care allows pregnant women to understand fetal development better. Can recognize normal developmental stages and identify warning signs if there is a problem. That way, pregnant women can be more aware of the welfare of their fetus and immediately seek medical help if necessary. The limitations of this article are that all articles come from developing countries, do not include validity and reliability tests on instruments and do not include research ethics (Hartono et al., 2020).

### 3. Result of Individual Sources of Evidence

The following are several themes that emerged from the Scoping Review conducted by researchers:

Table 1. Theme Mapping

Theme	Sub Theme	Article
Integrated ANC	1. Integrated antenatal knowledge	A1, A2,A3,A4
	2. Integrated ANC Visit	A1, A2,A4 A2,A4
	3. Factors related to Integrated ANC visits.	

## Discussion

Based on the results of a review of 5 articles that were in accordance with the aim of the scoping review, several articles were found that discussed the theme of factors that influence pregnant women's knowledge of Integrated ANC.

### a. Integrated antenatal knowledge

The knowledge that mothers have about antenatal care (ANC) services and the importance of pregnancy checks has an impact on pregnant women who will check their pregnancy with health workers. Knowledge about the benefits of a program (ANC services) causes pregnant women to have a positive attitude and will influence mothers to make antenatal visits (Siwi & Saputro, 2020) (Richards et al., 2013).

Pregnant women must have knowledge about pregnancy to be able to prepare them physically or mentally to reach the end of their pregnancy in a healthy way. If there are physical or psychological abnormalities, they can be found early and treated and give birth without difficulty (Yuriah, 2024) (Berkes et al., 2019).

The knowledge that pregnant women must have, such as the meaning of pregnancy, the benefits of pregnancy, various types of Integrated ANC examinations (HIV, Syphilis, HBSAg), ANC visit schedules, the impact and importance of pregnancy examinations for pregnant women if they do not have a pregnancy visit (Chilinda et al., 2021) (Rahayu, 2022).

### b. Integrated ANC Visit

Integrated ANC is an ANC visit carried out at least 6 times during pregnancy with a triple elimination laboratory examination, namely HIV, SYPHILIS, HBSAg (Rahayu, 2022) (Dukuzumuremyi et al., 2020). The minimum standards for ANC visits based on the (Yuriah et al., 2023) are 2 times in the first trimester, 1 time in the second trimester, and 3 times in the third trimester.

Integrated antenatal services are provided by doctors, midwives and trained nurses, while the types of integrated ANC service examinations are 17 types of examinations, namely general condition, body temperature, blood pressure, weight, LILA, TFU, fetal presentation, FHR, Hb, blood type, urine protein, blood sugar/reduction, malaria blood, BTA, syphilis blood, HIV serology, and ultrasound (Ickes et al., 2017) (Januarti & Hidayathillah, 2020).

### c. Factors associated with Integrated ANC visits.

#### 1) Knowledge

The knowledge that mothers have about Antenatal Care (ANC) services and the importance of pregnancy checks has an impact on pregnant women who will check their pregnancy with health workers (Eshete Tadesse et al., 2020). Knowledge about the benefits of a program (the benefits of ANC services) causes pregnant women to have a positive attitude which will influence mothers to make antenatal visits (Lian et al., 2022). The higher a person's level of knowledge, the more lasting his behavior will be. Mothers who understand and know about the ideal number of children will behave according to what they know.

## 2) Parity

Mothers who are pregnant for the first time usually have good knowledge about ANC due to lack of experience, but they can also have great curiosity about ANC (Nurfitriyani & Puspitasari, 2022).

## 3) Risk of pregnancy

Factors regarding the condition of pregnant women, especially mothers who are at risk of pregnancy, are Need Factors (Wati & Sulistyaningsih, 2023). During pregnancy, a pregnant woman experiences different changes every month. The condition of pregnant women must be understood, so that mothers know whether the condition (complaints) is normal or not so that they can detect danger signs of pregnancy (Chakraborty et al., 2020). Pregnancy danger signs are signs that indicate danger that may occur during the pregnancy/antenatal period, which if not reported or detected could cause maternal death.

## 4) Choice of Health Facilities

The choice of supporting facilities is one of the factors that influences integrated antenatal care visits. Apart from that, the distance or travel time is difficult or the long travel time results in feelings of laziness or reluctance to go to a health service and have the pregnancy checked (Siwi & Saputro, 2020) (Mchome et al., 2020).

## Conclusion

Most pregnant women in the first trimester have little knowledge and the attitude of most pregnant women in the first trimester is negative about the importance of carrying out integrated ANC examinations. Apart from knowledge, another thing that causes non-compliance with ANC is the lack of family support in regular pregnancy checks or according to standards stating that pregnant women do not live alone but in complex or diverse family and cultural environments.

## Conflict of interest statement

The authors declared that they have no competing interests.

## Statement of authorship

The authors have a responsibility for the conception and design of the study. The authors have approved the final article.

## Acknowledgements

We are grateful to two anonymous reviewers for their valuable comments on the earlier version of this paper.

## References

- Aulya, Y., Kuswandari, I., Suciawati, A., & Mutiariami, F. (2022). *Efektifitas Konseling Antenatal Terpadu Terhadap Pengetahuan Ibu Hamil di Puskesmas Pabuaran Tumpang, Tangerang*. 13(2).

- Berkes, J., Raikes, A., Bouguen, A., & Filmer, D. (2019). Joint roles of parenting and nutritional status for child development: Evidence from rural Cambodia. *Developmental Science*, 22(5), e12874. <https://doi.org/10.1111/desc.12874>
- Chakraborty, B., Yousefzadeh, S., Darak, S., & Haisma, H. (2020). "We struggle with the earth everyday": Parents' perspectives on the capabilities for healthy child growth in haor region of Bangladesh. *BMC Public Health*, 20(1), 140. <https://doi.org/10.1186/s12889-020-8196-9>
- Chilinda, Z. B., Wahlqvist, M. L., Lee, M.-S., & Huang, Y.-C. (2021). Higher maternal autonomy is associated with reduced child stunting in Malawi. *Scientific Reports*, 11(1), 3882. <https://doi.org/10.1038/s41598-021-83346-2>
- Dukuzumuremyi, J. P. C., Acheampong, K., Abesig, J., & Luo, J. (2020). Knowledge, attitude, and practice of exclusive breastfeeding among mothers in East Africa: A systematic review. *International Breastfeeding Journal*, 15(1), 70. <https://doi.org/10.1186/s13006-020-00313-9>
- Eshete Tadesse, S., Chane Mekonnen, T., & Adane, M. (2020). Priorities for intervention of childhood stunting in northeastern Ethiopia: A matched case-control study. *PLOS ONE*, 15(9), e0239255. <https://doi.org/10.1371/journal.pone.0239255>
- Hartono, R., Ipa, A., Sirajuddin, Amir, A., & Ishak, S. I. Z. S. (2020). Feeding Style for Children Aged 0-59 Months of Buginese Ethnicity. *Indian Journal of Forensic Medicine & Toxicology*. <https://doi.org/10.37506/ijfamt.v14i3.10560>
- Hutapea, R., Veronika, A., Manik, R. M., & Sinaga, D. (2022). *An Overview of Mother's Knowledge about Prevention of Stunting on Toddlers at Kasih Bunda Clinic Sunggal, Deli Serdang Regency 2022*. 13(01).
- Ickes, S. B., Baguma, C., Brahe, C. A., Myhre, J. A., Adair, L. S., Bentley, M. E., & Ammerman, A. S. (2017). Maternal participation in a nutrition education program in Uganda is associated with improved infant and young child feeding practices and feeding knowledge: A post-program comparison study. *BMC Nutrition*, 3(1), 32. <https://doi.org/10.1186/s40795-017-0140-8>
- Januarti, L. F., & Hidayathillah, A. P. (2020). Parenting Culture on The Role of Father in Prevention of Stunting in Toddler. *Babali Nursing Research*, 1(2), 81-90. <https://doi.org/10.37363/bnr.2020.1211>
- Laksono, A. D., Ibad, M., Mursita, A., Kusri, I., & Wulandari, R. D. (2019). Characteristics of Mother as Predictors of Stunting in Toddler. *Pakistan Journal of Nutrition*, 18(12), 1101-1106. <https://doi.org/10.3923/pjn.2019.1101.1106>
- Lian, B., Putra, M. J., Putra, A., Eka, D., & Riyanti, H. (2022). *Publikasi Artikel Ilmiah Dan Jurnal Bagi Pendidik dan Tenaga Kependidikan Di Wilayah Kecamatan Betung*.
- Mchome, Z., Yousefzadeh, S., Bailey, A., & Haisma, H. (2020). "When I Breastfeed, It Feels as if my Soul Leaves the Body": Maternal Capabilities for Healthy Child Growth in Rural Southeastern Tanzania. *International Journal of Environmental Research and Public Health*, 17(17), 6215. <https://doi.org/10.3390/ijerph17176215>
- Megatsari, H., Laksono, A. D., Herwanto, Y. T., Sarweni, K. P., Geno, R. A. P., Nugraheni, E., & Ibad, M. (2021). Does Husband/Partner Matter in Reduce Women's Risk of Worries?: Study of Psychosocial Burden of COVID-19 in Indonesia. *Indian Journal of Forensic Medicine & Toxicology*. <https://doi.org/10.37506/ijfamt.v15i1.13564>



- Muthoharoh, B. L., Yuriah, S., Gustiani, R., Agustina, Y. R., Indrawati, I., & Muftlillah, M. (2022). Efficacy of early initiation of breastfeeding (EIB) for preventing hypothermia in newborns. *Journal of Health Technology Assessment in Midwifery*, 5(2), 82–95. <https://doi.org/10.31101/jhtam.2211>
- Nurfitriyani, B. A., & Puspitasari, N. I. (2022). The Analysis of Factor that Associated the Antenatal Care (ANC) Visit in Pregnant Woman during the COVID-19 Pandemic at Blooto Health Center, Mojokerto. *Media Gizi Kesmas*, 11(1), 34–45. <https://doi.org/10.20473/mgk.v11i1.2022.34-45>
- Rahayu, I. (2022). HUBUNGAN PENGETAHUAN IBU HAMIL TENTANG ANC TERPADU DENGAN FREKUENSI KUNJUNGAN ANC DI WILAYAH KERA PUSKESMAS CIPARAY KABUPATEN BANDUNG. 11(2).
- Retnaningtyas, E., & Wahyuni, D. (2022). Analisis Pengetahuan Ibu Hamil terhadap pelaksanaan Antenatal Care terpadu di Desa Jampirogo Kecamatan Sooko Kabupaten Mojokerto. *Journal for Quality in Women's Health*, 5(1), 82–89. <https://doi.org/10.30994/jqwh.v5i1.89>
- Richards, E., Theobald, S., George, A., Kim, J. C., Rudert, C., Jehan, K., & Tolhurst, R. (2013). Going beyond the surface: Gendered intra-household bargaining as a social determinant of child health and nutrition in low and middle income countries. *Social Science & Medicine*, 95, 24–33. <https://doi.org/10.1016/j.socscimed.2012.06.015>
- Siwi, R. P. Y., & Saputro, H. (2020). Analisis Faktor Yang Mempengaruhi Rendahnya Kunjungan Antenatal Care (ANC) Terpadu Pada Ibu Hamil Di Wilayah Kerja Puskesmas Sukodono Kabupaten Lumajang. *Journal for Quality in Women's Health*, 3(1), 22–30. <https://doi.org/10.30994/jqwh.v3i1.45>
- Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., ... Straus, S. E. (2018). PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Annals of Internal Medicine*, 169(7), 467–473. <https://doi.org/10.7326/M18-0850>
- Wa Ode Nurul Mutia. (2022). Faktor-Faktor Yang Berhubungan Dengan Kunjungan Antenatal Care Terpadu Pada Ibu Hamil. *Jurnal Multidisiplin Madani*, 2(8), 3368–3373. <https://doi.org/10.55927/mudima.v2i8.895>
- Wati, I. A. A., & Sulistyaningsih, S. (2023). The Role of Parents to Prevent Stunting in Toddlers: Scoping Review. *Jurnal Aisyah : Jurnal Ilmu Kesehatan*, 8(2). <https://doi.org/10.30604/jika.v8i3.2037>
- Yuriah, S. (2024). Hubungan Tingkat Pengetahuan Ibu Hamil Tentang Hiv/Aids Dengan Sikap Terhadap Provider Initiated Test And Counselling (PITC). *Jurnal Kesehatan Abdurahman Palembang*, 13(1).
- Yuriah, S., Juniarti, S., & Sepriani, P. (2023). Midwifery care for Mrs “Y” at BPM Soraya Palembang. *International Journal of Health Sciences*, 7(S1), 2966–2984. <https://doi.org/10.53730/ijhs.v7nS1.14631>
- Yuriah, S., & Kartini, F. (2022). Factors Affecting with the Prevalence Of Hypertension In Pregnancy: Scoping Review. *PLACENTUM: Jurnal Ilmiah Kesehatan Dan Aplikasinya*, 10(1), 1. <https://doi.org/10.20961/placentum.v10i1.54822>
- Yuriah, S., Kartini, F., & Isnaeni, Y. (2022). Experiences of women with preeclampsia. *International Journal of Health & Medical Sciences*, 5(3), 201–210. <https://doi.org/10.21744/ijhms.v5n3.1901>