

The Relationship of Local Wisdom-Based Character Education on Young Females' Reproductive Health in Parigi Moutong

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ARTICLE INFO	ABSTRACT
<p>Manuscript Received: 30 Sept, 2024 Revised: 17 Nov, 2024 Accepted: 17 Nov, 2024 Date of Publication: 9 Dec, 2024 Volume: 7 Issue: 12 DOI: 10.56338/mppki.v7i12.6168</p>	<p>Background: This study evaluates the relationship between local wisdom-based character education and the reproductive health of young females in Parigi Moutong Regency. Character education strengthens adolescents' understanding and behavior regarding reproductive health, emphasizing values of integrity and responsibility. To assess how character education grounded in local wisdom influences reproductive health knowledge, attitudes, and behaviors among young females.</p> <p>Method: A quantitative cross-sectional design was employed, involving 150 respondents selected through purposive sampling. Data analysis utilized the Spearman correlation test.</p> <p>Result: The study found a significant positive relationship between character education based on local wisdom and reproductive health, with a correlation coefficient (r_s) of 0.68 and a p-value of 0.001. This indicates that higher quality character education correlates with improved reproductive health knowledge, attitudes, and behaviors.</p> <p>Conclusion: Character education rooted in local wisdom significantly enhances reproductive health outcomes among adolescents. Integrating cultural values into education programs is vital for promoting healthier behaviors in rural communities.</p>
<p>KEYWORDS</p> <p>Character Education; Local Wisdom; Reproductive Health; Young Females</p>	
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INTRODUCTION

This study investigates the relationship between local wisdom-based character education and the reproductive health of young females in Parigi Moutong Regency. Character education is essential in shaping adolescents' behavior, attitudes, and decision-making, particularly concerning health and well-being (1). In the context of reproductive health, it serves as a preventive approach to enhance understanding, empower informed decisions, and encourage positive behaviors, potentially reducing risks such as early marriage, unwanted pregnancies, and sexually transmitted infections (STIs) (2). As adolescents navigate a crucial developmental period, local cultural values can significantly influence their perceptions and attitudes toward reproductive health, making character education a vital tool for health promotion (3).

Challenges in adolescent reproductive health in Indonesia are evident, including high rates of early marriage, unwanted pregnancies, and the spread of sexually transmitted infections (STIs). According to a report from the National Population and Family Planning Board (BKKBN), Indonesia still faces significant challenges in reducing adolescent pregnancy rates, which can impact maternal and child health as well as the future of young females (4). Parigi Moutong Regency was chosen as an ideal location for this study because of its strong community ties and the practice of local wisdom in everyday life. Cultural values such as mutual cooperation, respect for elders, and

traditional norms greatly influence the mindset and behavior of the community, including adolescents. Therefore, studying the impact of local wisdom-based character education in Parigi Moutong can provide valuable insights into how culturally rooted approaches can improve adolescents' knowledge and behaviors regarding reproductive health. Studies have shown that incorporating local wisdom into character education is effective in fostering responsible health behaviors (5). For instance, local values emphasizing the importance of family, community support, and self-care have been linked to better health outcomes among adolescents. (6). Research suggests that character education that resonates with local cultural norms and practices is more likely to be understood, accepted, and applied by the youth (7). Additionally, theories such as the Social Cognitive Theory underline the significance of cultural and social contexts in shaping individuals' attitudes and behaviors, supporting the idea that culturally tailored education is pivotal in health behavior change (8). Recent findings indicate that in regions with strong cultural traditions, character education rooted in these traditions is associated with increased knowledge and better health practices among young females, particularly in terms of reproductive health management (9).

Despite the knowledge and understanding gained from previous research, there remains a gap in understanding how character education based on local wisdom directly influences reproductive health outcomes in specific populations, particularly among young females in rural areas such as Parigi Moutong Regency. While existing research supports the theoretical link between character education and health behaviors, there is still limited empirical evidence examining how culturally embedded educational approaches can enhance adolescents' reproductive health knowledge, attitudes, and behaviors (10).

The rationale for this study lies in the need to explore culturally relevant health education approaches that address specific public health challenges, such as adolescent reproductive health (11). Given that many traditional health education programs may not fully align with local values and practices, character education based on local wisdom has the potential to be a more effective strategy for behavior change (12). This research is significant in the context of public health because it addresses the cultural determinants of health behavior and aims to provide insights for culturally sensitive interventions that can be applied in similar contexts to improve reproductive health and the quality of life of young females (13).

The objective of this study is to assess the relationship between character education based on local wisdom and the reproductive health of young females in Parigi Moutong Regency. Specifically, the study aims to explore how the values taught through character education influence adolescents' knowledge, attitudes, and behaviors related to reproductive health. By achieving these objectives, this research seeks to contribute to the body of knowledge on culturally tailored health education and its impact on reproductive health outcomes, providing valuable insights for policymakers and health educators in developing effective strategies for adolescent health promotion (14).

METHOD

This study employs a quantitative approach with a cross-sectional design to assess the relationship between character education based on local wisdom and the reproductive health of young females in Parigi Moutong Regency (15).

The study population consists of young females aged 12-19 years residing in North Parigi Subdistrict, Parigi Moutong Regency. A purposive sampling technique is used to select participants based on specific inclusion criteria, namely being aged 12 to 19 years, residing in the study area, and being willing to participate by providing written consent (16). These criteria were carefully established to ensure that the sample is relevant and representative of the target population.

A total of 150 respondents are targeted to ensure adequate representation and statistical power (17). Data is collected using a validated questionnaire designed to measure character education based on local wisdom and reproductive health (18). The questionnaire is divided into two main sections. The first section measures character education, focusing on values such as integrity, personal responsibility, and cultural norms, using an ordinal rating scale categorized into low, medium, and high. The second section evaluates reproductive health, assessing knowledge, attitudes, and behaviors related to reproductive health, also using an ordinal scale. Each item in the questionnaire has been pilot-tested to ensure reliability and validity (19),(20).

Participants who meet the inclusion criteria are identified and provide consent after being informed about the study. The validated questionnaire is then distributed directly to respondents to ensure accurate data collection and to

address any questions that may arise (21). Completed questionnaires are checked for completeness and accuracy before the data is entered for analysis.

Data analysis is conducted using descriptive and inferential statistical methods. Descriptive statistics are used to summarize the demographic characteristics of the respondents and their responses to the questionnaire items. The Spearman correlation test is used to evaluate the relationship between character education (independent variable) and reproductive health (dependent variable). This test is chosen because the data are ordinal and to assess the strength and direction of the relationship between variables. A significance level of $p < 0.05$ is set to determine statistical significance (22).

Ethical Approval

All participants, including parents or guardians for those under 18 years of age, provided informed consent after receiving comprehensive information prior to their participation in the study. The confidentiality and anonymity of all participants were strictly maintained throughout the research process.

RESULTS

This study aims to evaluate the relationship between character education based on local wisdom and the reproductive health of adolescent girls in Parigi Moutong Regency. Data were analyzed using descriptive and inferential statistics to provide a demographic overview of the respondents and to assess the relationship between the two main variables.

Descriptive Statistics

Out of the total 150 respondents who met the inclusion criteria, 60% were aged 16-19 years, while the remaining 40% were aged 12-15 years. The level of character education based on local wisdom was classified into three categories: low, medium, and high. The results showed that 70% of respondents had a high level of character education, 20% were at a medium level, and 10% were at a low level. In terms of reproductive health, 65% of young females demonstrated good knowledge and behaviour related to reproductive health, 25% were at a medium level, and 10% were at a low level.

Table 1. Descriptive Statistics of Respondents by Age Group, Character Education Level, and Reproductive Health Level

Age Group	Character Education Level	Reproductive Health Level	Frequency (N)	Percentage (%)
12-15 years	Low	Low	5	3.33%
		Medium	10	6.67%
		High	45	30%
	Total		60	40%
16-19 years	Low	Low	10	6.67%
		Medium	27	18%
		High	53	35.33%
	Total		90	60%
Total			150	100%

Table 1 presents the descriptive statistics of respondents by age group, character education level, and reproductive health level.

For the age group of 12-15 years, 5 respondents (3.33%) have a low level of character education, 10 respondents (6.67%) fall into the medium category, and 45 respondents (30%) have a high level of character education. In terms of reproductive health, among the 60 respondents in this age group, 5 respondents (3.33%) had a low level of reproductive health, 10 respondents (6.67%) were at a medium level, and 45 respondents (30%) demonstrated good reproductive health. This indicates that even among the younger age group, those with higher levels of character education tend to exhibit better reproductive health.

On the other hand, for the age group of 16-19 years, 10 respondents (6.67%) have a low level of character education, 27 respondents (18%) are at a medium level, and 53 respondents (35.33%) have a high level of character

education. Regarding reproductive health, among the 90 respondents in this age group, 10 respondents (6.67%) had a low level of reproductive health, 27 respondents (18%) were at a medium level, and 53 respondents (35.33%) demonstrated good reproductive health. This shows a strong trend where older adolescents with high levels of character education are more likely to have good reproductive health, emphasizing the potential benefits of character education on health outcomes.

Overall, the results from the table indicate that the majority of young females in this study have a high level of character education and good reproductive health, especially in the age group of 16-19 years. These findings suggest that character education based on local wisdom has the potential to positively impact reproductive health among young females.

Inferential Statistics

The Spearman correlation test is used to examine the relationship between character education based on local wisdom (independent variable) and the reproductive health of young females (dependent variable). The results of the Spearman correlation test indicate a significant relationship, as shown in the table below:

Table 2. Spearman Correlation Test between Character Education Based on Local Wisdom and Reproductive Health

Variable	Correlation Coefficient (r_s)	P-value
Character Education Based on Local Wisdom and Reproductive Health	0,68	0,001

Based on Table 2, the Spearman Correlation Test between character education based on local wisdom and reproductive health indicates that a correlation coefficient of 0.68 demonstrates a strong relationship between character education based on local wisdom and the reproductive health of young females. A p-value less than 0.05 indicates that this relationship is significant.

Interpretation and Implications

The strong positive correlation indicates that higher levels of character education are significantly associated with better reproductive health among young females. This highlights the importance of character education that emphasizes cultural values in promoting health-related behaviours.

DISCUSSION

Interpretation of the Findings

The study has demonstrated a significant positive relationship between local wisdom-based character education and reproductive health among young females in Parigi Moutong Regency. The Spearman correlation test showed a strong relationship, with a correlation coefficient of 0.68 and a p-value of 0.001. This indicates that higher-quality character education is associated with improved knowledge, attitudes, and behaviours related to reproductive health among young females. These results emphasize the critical role of local wisdom in shaping health behaviours, particularly in helping adolescents maintain good reproductive health. Such culturally relevant education can drive healthier behaviours, highlighting its importance for public health strategies.

The findings align with previous research that underscores the importance of culturally relevant education in promoting health. Local values, integrity, personal responsibility, and family norms, resonate well with adolescents and make health messages more relatable and effective (5,6). Thus, integrating local wisdom into character education is both culturally appropriate and effective in tackling public health issues like early marriage, unwanted pregnancies, and sexually transmitted infections (STIs) (23) (24).

Comparison with Prior Research

The results of this study are consistent with previous studies that emphasize the impact of culturally tailored health education in promoting responsible health behaviours. Previous research has shown that character education rooted in local values significantly enhances reproductive health outcomes, similar to the findings of this study. For instance, health promotion strategies that incorporate community support and cultural norms have been linked to better health knowledge and behaviours among adolescents (2,5,14,15,25). However, this study uniquely contributes

by examining rural Indonesia, where local cultural practices have a profound influence on adolescent behaviour. By focusing on a rural setting, this research provides new empirical evidence and stresses the importance of local adaptation. While prior studies have predominantly concentrated on urban areas, these findings underscore the need for culturally sensitive health education programs tailored to the specific needs of rural communities, where traditional values are deeply embedded.

While prior research has largely focused on urban areas or other regions, this study offers insights into how character education can be adapted to rural settings with strong cultural traditions. This underscores the necessity of developing health education programs that are sensitive to the unique needs of rural populations, where traditional values and norms play a significant role.

Practical Implications for Public Health and Behavioural Science

The findings highlight the importance of integrating local cultural wisdom into health education programs targeting adolescents. Public health practitioners and policymakers should consider designing health interventions that reflect local values and norms to enhance their relevance and effectiveness (26–34). Specifically, in the context of reproductive health, character education that promotes integrity, responsibility, and cultural values can help delay early marriages, reduce the risk of unwanted pregnancies, and prevent STIs. These insights suggest practical steps, such as incorporating cultural teachings into school curriculums or partnering with local leaders to ensure that programs are contextually appropriate and effective.

For behavioural science, this study reinforces the importance of considering cultural and social factors when developing interventions aimed at behaviour change (5,15,25). The results suggest that culturally adapted education is more likely to influence attitudes and behaviours, particularly in sensitive areas like reproductive health.

Strengths and Limitations of the Study

One of the strengths of this study is its focus on local wisdom, which offers a culturally grounded approach to health education. The use of a quantitative cross-sectional design and the application of validated questionnaires ensure the reliability of the data. Furthermore, the study's focus on a rural population, often underrepresented in research, adds valuable insights to the field of public health.

However, the study is not without limitations. The use of purposive sampling may limit the generalizability of the findings to other regions or populations. Additionally, the cross-sectional design only provides a snapshot of the relationship between character education and reproductive health at one point in time, making it difficult to infer causality. These limitations suggest that future studies should employ more representative sampling techniques and consider a longitudinal design to capture causal relationships. Moreover, exploring other factors, such as economic and social influences on health behaviours, could further enhance understanding.

Limitations and Cautions

Although this study provides valuable insights, several limitations must be acknowledged. The use of a cross-sectional design limits the ability to infer causal relationships between character education and reproductive health. Additionally, the purposive sampling method may restrict the generalizability of the findings to broader populations. Future studies are recommended to employ longitudinal designs and more diverse sampling techniques to address these limitations.

Recommendations for Future Research

Future studies should explore the long-term effects of character education based on local wisdom on reproductive health outcomes. A longitudinal design would help in understanding how sustained character education influences behaviour change over time. Additionally, research should examine how these educational interventions can be adapted to other regions with different cultural values to determine the broader applicability of the findings.

Further investigations into the specific components of character education that have the greatest impact on reproductive health could also guide the development of more targeted health promotion strategies. Finally, qualitative research could provide deeper insights into the lived experiences of adolescents in relation to character education and reproductive health, offering a more nuanced understanding of the cultural factors at play.

In conclusion, this study underscores the value of local wisdom in shaping health education and offers a promising avenue for improving reproductive health among adolescents in rural settings. Through culturally tailored interventions, public health programs can be more effective in addressing the unique challenges faced by young females in maintaining their reproductive health.

CONCLUSION

This study effectively addresses the research question by establishing a significant relationship between local wisdom-based character education and the reproductive health of young females in Parigi Moutong Regency. The findings demonstrate that higher levels of character education, rooted in cultural values such as integrity, responsibility, and adherence to local norms, are associated with better reproductive health outcomes, including improved knowledge, attitudes, and behaviors. These results underscore the broader significance of incorporating culturally tailored education into public health programs, especially in rural settings, to promote healthier behaviors and outcomes among adolescents.

Practical recommendations include integrating local wisdom into school health curricula. Policymakers should collaborate with community leaders and cultural experts to design educational programs that reflect local values, ensuring greater cultural relevance and acceptance. Additionally, educators should receive training to effectively incorporate these cultural elements into their teaching, enhancing the impact of health education initiatives.

The study's strengths lie in its focus on a culturally relevant approach to education and health promotion, as well as the robust use of a validated questionnaire and reliable statistical analysis. However, the use of purposive sampling and a cross-sectional design limits the generalizability and causality of the findings. These limitations should be taken into account when interpreting the results and applying them to different contexts.

In terms of future research, longitudinal studies are recommended to further explore the long-term impact of character education on reproductive health. Expanding the research to include diverse cultural settings would also provide a more comprehensive understanding of how local wisdom can be leveraged to address public health challenges. By addressing these areas, future studies can refine health promotion strategies and contribute to more effective interventions for improving adolescent reproductive health.

This conclusion synthesizes the study's key contributions while providing a clear direction for future research, thereby closing the scholarly discourse on the relationship between character education and reproductive health within this cultural context.

Based on the findings of this study, it is recommended to conduct longitudinal research to evaluate the long-term impact of local wisdom-based character education on adolescent reproductive health. Such research would provide insights into how sustained character education influences health behaviors over time. Additionally, public health policies should adopt culturally-based approaches, particularly in rural areas, to enhance the effectiveness of health programs. Integrating local wisdom-based character education into school curricula and community programs is also suggested to promote better behavioural changes.

Further research in regions with different cultural backgrounds is encouraged to assess the applicability of this approach across various contexts. This expansion would help determine whether culturally tailored education strategies can be generalized and adapted to diverse settings, addressing unique cultural dynamics. Lastly, interdisciplinary collaboration is necessary to develop holistic and sustainable health promotion programs rooted in local wisdom.

AUTHOR'S CONTRIBUTION STATEMENT

Indra Afrianto designed and developed the study, collected and analyzed the data, and drafted the initial manuscript. Herlina Yusuf contributed to the study design, supervised the research process, and reviewed the final manuscript to ensure its intellectual rigor. Both authors have read and approved the final manuscript.

CONFLICTS OF INTEREST

The authors declare no conflict of interest related to the publication of this article.

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BIBLIOGRAPHY

1. Leung H, Shek DTL, Leung E, Shek EYW. Development of contextually-relevant sexuality education: Lessons from a comprehensive review of adolescent sexuality education across cultures. *Int J Environ Res Public Health*. 2019;16(4):621.
2. Walls NE, Atteberry-Ash B, Kattari SK, Peitzmeier S, Kattari L, Langenderfer-Magruder L. Gender Identity, Sexual Orientation, Mental Health, and Bullying as Predictors of Partner Violence in a Representative Sample of Youth. *J Adolesc Heal*. 2019 Jan;64(1):86–92.
3. Morales A, Garcia-Montaña E, Barrios-Ortega C, Niebles-Charris J, Garcia-Roncillo P, Abello-Luque D, et al. Adaptation of an effective school-based sexual health promotion program for youth in Colombia. *Soc Sci Med*. 2019;222:207–15.
4. Ayuandini S, Habito M, Ellis S, Kennedy E, Akiyama M, Binder G, et al. Contemporary pathways to adolescent pregnancy in Indonesia: A qualitative investigation with adolescent girls in West Java and Central Sulawesi. *PLOS Glob public Heal*. 2023;3(10):e0001700.
5. Wijayanti T, Saputri AR. Character Education, Local Wisdom, and the Profile of Pancasila Students: Challenges and Potential Approach. *Indones Res J Educ IRJE*. 2024;8(1):350–62.
6. Melesse DY, Mutua MK, Choudhury A, Wado YD, Faye CM, Neal S, et al. Adolescent sexual and reproductive health in sub-Saharan Africa: who is left behind? *BMJ Glob Heal*. 2020;5(1):e002231.
7. Hermino A, Arifin I. Contextual character education for students in the senior high school. *Eur J Educ Res*. 2020;9(3):1009–23.
8. McCauley SM, Christiansen MH. Language learning as language use: A cross-linguistic model of child language development. *Psychol Rev*. 2019 Jan;126(1):1–51.
9. Singh B. Character education in the 21st century. *J Soc Stud*. 2019;15(1):1–12.
10. Shek DTL, Siu AMH. “UNHAPPY” Environment for Adolescent Development in Hong Kong. *J Adolesc Heal*. 2019 Jun;64(6):S1–4.
11. Parrish JW, Fleckman JM, Prindle JJ, Eastman AL, Weil LEG. Measuring the Incidence of Child Maltreatment Using Linked Data: A Two-State Comparison. *Am J Prev Med*. 2020 Apr;58(4):e133–40.
12. Saphira HV. Integrating Local Wisdom-Based Learning To Preparing The Pancasila Students’ Profile, Yes or No? *Int J Curr Educ Res*. 2022;1(1):18–35.
13. Pandey PL, Seale H, Razee H. Exploring the factors impacting on access and acceptance of sexual and reproductive health services provided by adolescent-friendly health services in Nepal. *PLoS One*. 2019;14(8):e0220855.
14. Abdullah I, Hidayana B, Kutaneegara PM, Indiyanto A. Beyond school reach: Character education in three schools in Yogyakarta, Indonesia. *J Educ Soc Res*. 2019;9.
15. Suhartini S, Sekarningrum B, Sulaeman M, Gunawan W. Social construction of student behavior through character education based on local wisdom. *J Soc Stud Educ Res*. 2019;10(3):276–91.
16. Etikan I. Comparison of Convenience Sampling and Purposive Sampling. *Am J Theor Appl Stat*. 2016;5(1):1.
17. Thomas FB. The role of purposive sampling technique as a tool for informal choices in a social Sciences in research methods. *Just Agric*. 2022;2(5):1–8.
18. Curle SM, Derakhshan A. Trends in using questionnaires for EMI research: Suggestions for future

- improvements. In: *Research methods in English medium instruction*. Routledge; 2021. p. 32–45.
19. Yang T, Wang Y, Deng J, Huang C. Attitude, social norms, and perceived behavioral control influence the academic integrity-related behavioral intentions of graduate students. *Soc Behav Personal an Int J*. 2021;49(4):1–12.
 20. Shea B, Boers M, Grimshaw JM, Hamel C, Bouter LM. Does updating improve the methodological and reporting quality of systematic reviews? *BMC Med Res Methodol*. 2006 Dec;6(1):27.
 21. Wilson TR, Fishbein DB, Ellis PA, Edlavitch SA. The impact of a school entry law on adolescent immunization rates. *J Adolesc Heal*. 2005 Dec;37(6):511–6.
 22. Leavy P. *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. Guilford Publications; 2022.
 23. Millanzi WC. The effectiveness of integrated reproductive health lesson materials in a problem-based pedagogy on knowledge, soft skills, and sexual behaviors among adolescents in Tanzania. *Univ Dodoma Institutional Repos* <http://repository.costech.or.tz/handle/20500>. 2021;12661:3463.
 24. Sunarti S, Sansuwito TB, Nugroho PS, Amalia N, Masnina R, Suwarni L. The Role of Education in Preventing E-Smoking Behavior is to Increase Student Knowledge and Attitudes. *J Public Heal Pharm [Internet]*. 2024;4(1):80–9. Available from: <https://www.jurnal.unismuhpalu.ac.id/index.php/jphp/article/download/5025/3781>
 25. Bearinger LH, Sieving RE, Ferguson J, Sharma V. Global perspectives on the sexual and reproductive health of adolescents: patterns, prevention, and potential. *Lancet*. 2007;369(9568):1220–31.
 26. Nurfatimah N, Sumiaty S, Ramadhan K, Taqwin T, Siraoka IP. Analysis of Contributing Factors to Stunting in Poso Regency: A Perspective from the Special Stunting Handling Index. *J Public Heal Pharm [Internet]*. 2024;4(3):205–13. Available from: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85209632839&doi=10.56338%2Fjphp.v4i3.4813&partnerID=40&md5=0bdf1dc8098cc0ec4788256e0b39c52b>
 27. Yaturramadhan H, Putri CL. Formulation of Natural Handsanitizer From Red Belt (*Piper Crocatum*) Leaves and Aloe Vera (*Aloe Vera*). *J Public Heal Pharm*. 2021;1(2):43–5.
 28. Dela, Budiman, Eka. Study of Knowledge and Attitudes of Food Handlers in Food Processing at the Beach Pogaian Diner, Tomini Village, Tomini District of Parigi Moutong. *J Public Heal Pharm*. 2022;2(2):30–3.
 29. Angie E, Amra AA, Sari MD. Correlation Between Axial Length and Amplitude of Accommodation in Myopia Patients. *J Public Heal Pharm [Internet]*. 2024;4(3):300–17. Available from: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85209639745&doi=10.56338%2Fjphp.v4i3.5576&partnerID=40&md5=dbc0fcb9db3f8beeb7e68f98835c9183>
 30. Waris MAA, Farid AM, Misra. Antifungal Activity of *Cassia alata* L. Ethyl Acetate and N-Hexane Leaves Extract against *Candida albicans*. *J Public Heal Pharm*. 2021;1(2):27–9.
 31. Yanti S, Putri CL. Literature Study of Formulating and Testing Physical Properties of Hand Sanitizer Preparations of Various Plant Extracts. *J Public Heal Pharm*. 2022;2(1):15–9.
 32. Sudirman S, Yusuf H, Nurhidayati N, Ariandini M. Dental Service Quality and Patient Satisfaction: Insights From Anutapura General Hospital, Palu City. *J Public Heal Pharm*. 2024;4(1):56–63.
 33. Widyawaty, Lestari A. An Analysis of Macro Nutrition in Red Dragon Fruit (*Hylocereus Polurhizus*) Peel Dodol. *J Public Heal Pharm*. 2022;2(2):37–40.
 34. Riyad M, Salham M, Moonti S. Husband Behavior in Supporting Immunization in Babies. *J Public Heal Pharm*. 2023;3(3):71–6.