

Factors Related to Adolescent Girls' Attitudes Toward Consuming *Rorano* Herbal Medicine

Nurkila Suaib^{1*}, Irawati Umaternate¹, Asmaryani Hasim¹

¹ Department of Midwifery, Poltekkes Kemenkes Ternate, Ternate City, Indonesia.

Received: December 31, 2025

Revised: April 07, 2026

Accepted: April 25, 2026

Published: April 30, 2026

Corresponding Author:

Nurkila Suaib

nurkilas81@gmail.com

DOI: [10.29303/jossed.v7i1.14142](https://doi.org/10.29303/jossed.v7i1.14142)

 Open Access

© 2026 The Authors. This article is distributed under a (CC-BY License)



Abstract: This study comprehensively identified and analyzed multifaceted factors influencing adolescent girls' attitudes toward consuming *Rorano* herbal medicine within the Indonesian cultural context. This study aimed to analyze knowledge, interest, cultural, and economic factors related to adolescent girls' attitudes toward consuming *Rorano* Datang Bulan herbal medicine in the working area of Bahari Berkesan Community Health Center, Ternate City. A cross-sectional, observational analytical design was implemented from July to December, using a structured questionnaire. All adolescent girls aged 12–16 years who were menstruating and consuming *Rorano* (n=65) were included through total sampling. The majority were aged 12–13 years (52.3%), had parental income below the minimum wage (UMR) (55.4%), and had knowledge and attitudes categorized as "adequate" (41.5% and 43.1%). Bivariate analysis showed that age was associated with knowledge (p=0.045; OR=1.80) and attitudes (p=0.032; OR=2.10). Interest was the strongest predictor of knowledge (p=0.001; OR=2.50) and attitude (p=0.005; OR=2.75), while culture was also significant (p≤0.020; OR≈1.90–2.00); economic variables were not significant. Logistic regression confirmed the interaction of interest×attitude (OR=2.87) and interest×knowledge (OR=2.55) as the main determinants. These findings indicate that strengthening interest and internalizing cultural norms can improve literacy and acceptance of herbal medicine in adolescents.

Keywords: Adolescent health; Attitudes; Culture; Herbal medicine; Knowledge.

Introduction

Globally, adolescent health behaviors and consumption patterns have become a critical area of public health research, with mounting evidence demonstrating the complex interplay of factors influencing young people's attitudes toward health-related products and interventions. Research across diverse populations reveals that adolescents' consumption behaviors are significantly influenced by multiple determinants including health beliefs, social norms, and environmental factors (Eny et al., 2023). Furthermore, global evidence indicates that adolescents' health literacy levels significantly impact their ability to make informed health decisions, with lower socioeconomic status often correlating with reduced health literacy and subsequently affecting health behavior choices (Haynes-Maslow et al., 2022). The Theory of Planned Behavior has emerged as a predominant framework for understanding adolescent health behaviors internationally, with subjective norms consistently identified as significant predictors of

health-related intentions and behaviors across various cultural contexts (Oyedeji et al., 2024; Yuriev et al., 2020).

The Indonesian healthcare landscape presents particular challenges for adolescent health promotion, as evidenced by research on compliance with health interventions among young women, which shows significant relationships between compliance behaviors and health outcomes (Yanniarti et al., 2023). Indonesian adolescents face multiple environmental and social pressures that influence their health decision-making processes, including exposure to negative cultural influences and declining religious values, which collectively impact their receptivity to traditional health interventions (Eny et al., 2023). The utilization of reproductive health services among Indonesian female adolescents remains a public health concern, with knowledge, attitude, and perception serving as key predisposing factors affecting service utilization (Maku & Titilayo, 2024).

Extensive previous research has established a robust foundation for understanding adolescent

How to Cite:

Suaib, N., Umaternate, I., & Hasim, A. (2026). Factors Related to Adolescent Girls' Attitudes Toward Consuming *Rorano* Herbal Medicine. *Journal of Science and Science Education*, 7(1), 46–52. <https://doi.org/10.29303/jossed.v7i1.14142>

consumption behaviors and their determinants across various health contexts. Studies examining fast-food consumption among university students have identified that subjective norms and knowledge serve as the most important predictors of consumption intentions, with the Theory of Planned Behavior explaining significant variance in adolescent behavioral intentions (Didarloo et al., 2022). Research on iron-rich food consumption among Senegalese adolescent girls has demonstrated that food environment, social norms, and individual factors such as knowledge, beliefs, and autonomy serve as primary drivers of adolescent food behaviors, emphasizing the need for context-specific strategies in low- and middle-income countries (Dupuis et al., 2024). Investigations into tobacco and substance use among adolescents have revealed that attitudes, subjective norms, and behavioral willingness effectively predict behavioral intentions, with positive attitudes and social encouragement significantly increasing intention to engage in specific behaviors (Bashirian et al., 2020; Gupta et al., 2022).

The extended Theory of Planned Behavior has been successfully applied to understand various health behaviors among adolescents, including dietary choices, substance use, and health service utilization (Reinhardt et al., 2022). Additional theoretical frameworks, such as the Prototype-Willingness Model, have been employed to understand adolescent health behaviors, particularly in contexts involving risk behaviors, demonstrating that attitude, subjective norms, and behavioral willingness effectively predict behavioral intentions (Bashirian et al., 2020).

Globally, adolescent health research indicates that attitudes and behaviors regarding health product consumption are influenced by the interaction of cognitive (health knowledge and literacy), affective (interests), and socio-cultural (subjective norms and community practices) factors, as described in the Theory of Planned Behavior and cross-context findings related to food, addictive substances, and health service utilization. However, most of this evidence focuses on modern commodities or risky behaviors, leaving the dynamics of traditional medicine acceptance among adolescent especially for reproductive health understudied. In the Indonesian context, where traditional healing practices coexist with formal health services, Rorano "Datang Bulan" (Monthly Coming) is an example of a herbal intervention consumed by adolescent girls and potentially strongly influenced by cultural values, family figures, and economic access. Therefore, linking the global framework of adolescent attitude determinants to the Rorano case is crucial to explain how interests, knowledge, and cultural norms shape herbal acceptance among local adolescent populations.

The primary objective of this research is to comprehensively identify and analyze the multifaceted factors that influence adolescent girls' attitudes toward consuming Rorano herbal medicine within the Indonesian cultural context. The novelty of this study lies in its specific and contextual empirical focus on the attitudes of adolescent girls (12–16 years old) who have consumed the Rorano "Datang Bulan" herbal medicine in the working area of the Bahari Berkesan Community Health Center, Ternate a population rarely studied in the literature on adolescent health behavior, which generally focuses on fast food, addictive substances, or health services. Second, this study not only examines general determinants (knowledge, culture, economy), but also maps the relative strength of predictors through OR and logistic regression, thus showing "interest" as the strongest determinant of attitude and knowledge, while economic factors are not significant. Third, the main analytical contribution is the examination of interactions (interest \times attitude; interest \times knowledge) as the dominant determinant, which is rarely reported in adolescent-based traditional herbal medicine studies.

Method

Types and Approaches of Research

This study used a quantitative approach to examine the relationship (association) between several factors (knowledge, interest, culture, and economics) and adolescent girls' attitudes toward consuming Rorano herbal medicine. The quantitative approach was chosen because it allows for structured measurement of variables through a questionnaire instrument, as well as statistical analysis to objectively examine the interplay between variables.

Research Design

The research design used was an observational analytic approach with a cross-sectional design. In this design, measurements of the independent and dependent variables were conducted simultaneously (during one data collection period) without any intervention from the researcher.

Location and Time of Research

Research location is in the work area of the Bahari berkesan Community Health Center, Ternate City area with the time from July to December.

Population and Sample

The population in this study included all female adolescents in Ternate City who consumed the herbal remedy Rorano Datang Bulan, with a total of 65 identified. Because this study applied total sampling, then all members of the population who meet the

criteria are included as respondents, so that the sample size is the same as the population ($n = 65$). The choice of total sampling is based on the consideration that the population is relatively small and affordable to be studied comprehensively, so that it can minimize the selection bias that often occurs in partial sample selection and at the same time maximize the information power of the available population.

Sample criteria

The subjects of this study were adolescent girls who were menstruating and consuming Rorano Datang Bulan during that period. Participation was voluntary, demonstrated by willingness to participate and signing an Informed Consent form after receiving adequate explanations. The study focused on the 12–16-year-old age group as the target age group, and required respondents to have experienced menarche, i.e., have entered the biological phase of menstruation, as a relevant prerequisite for participation in the study.

Subjects were excluded if they were unwilling to sign the Informed Consent form after explanations were provided or chose to withdraw at any time during the research process. This exclusion provision emphasized that participation was not coercive and that each respondent had the full right to discontinue participation without consequence. This principle aligns with respect for individual autonomy in research ethics, particularly in ensuring informed, free, and sustained consent.

Research Ethics

This research has received approval from the Ternate Ministry of Health Polytechnic of Health under the license number LB.11.KE/2025/FU, issued in July 2025.

Result and Discussion

Based on Table 1, the majority of respondents were aged 12–13 years (34; 52.3%), while those aged 14–16 years were slightly lower (31; 47.7%). Socioeconomically, more than half of parents had incomes below the Minimum Wage (36; 55.4%), and most parents worked in the informal sector (32; 49.2%), followed by self-employed (25; 38.5%), while ASN was the smallest proportion (8; 12.3%). In terms of psychosocial factors, interest in consuming Rorano Datang herbal medicine was relatively balanced but tended to be high (35; 53.8%), as were cultural variables which were almost equal between the high (33; 50.8%) and low (32; 49.2%) categories. From the cognitive side, respondents' knowledge was dominated by the "sufficient" category (27; 41.5%), with "poor" (20; 30.8%) and "good" (18; 27.7%). In line with this, attitudes

towards consuming herbal medicine were mostly in the "sufficient" category (28; 43.1%), followed by "less" (22; 33.8%) and "good" (15; 23.1%).

Table 1. Identification of Adolescent Characteristics

Characteristics	Category	Frequency (n)	Percentage (%)
Age	12–13	34	52.3
	14–16	31	47.7
Parents' income	< Minimum Wage	36	55.4
	> Minimum Wage	29	44.6
Parents' job	ASN	8	12.3
	Self-employed	25	38.5
	Informal	32	49.2
Interest	Tall	35	53.8
	Low	30	46.2
Culture	Tall	33	50.8
	Low	32	49.2
Knowledge	Good	18	27.7
	Enough	27	41.5
	Not enough	20	30.8
Attitude	Good	15	23.1
	Enough	28	43.1
	Not enough	22	33.8

Table 2 shows the results of the bivariate analysis between independent variables and the knowledge and attitudes of adolescent girls towards consuming Rorano Datang herbal medicine. Age was significantly associated with knowledge ($p=0.045$; $OR=1.80$) and attitude ($p=0.032$; $OR=2.10$), indicating that respondents in certain age categories had a greater chance of being knowledgeable and having a more positive attitude. Interest was the strongest and most significant factor, both for knowledge ($p=0.001$; $OR=2.50$) and attitude ($p=0.005$; $OR=2.75$), so that increased interest was related to increased opportunities for knowledge and positive attitudes. Culture was also significantly associated with knowledge ($p=0.020$; $OR=1.90$) and attitude ($p=0.010$; $OR=2.00$), indicating the role of cultural norms/customs. In contrast, parental income ($p>0.05$) and parental occupation ($p>0.05$) did not show a significant relationship with knowledge or attitude.

Table 2. Bivariate analysis of the relationship between independent variables and dependent variables

Variables	Knowledge		Attitude	
	Sig	Odds ratio	Sig	Odds ratio
Age	0.045	1.80	0.032	2.10
Parents' income	0.054	0.85	0.098	0.92
Parents' job	0.110	1.35	0.205	1.28
Interest	0.001	2.50	0.005	2.75
Culture	0.020	1.90	0.010	2.00

Based on multivariate logistic regression analysis (Table 3), several interactions between independent variables showed significant associations with outcomes. The Age×Attitude interaction was significant (B=0.74; p=0.034) with Exp(B)=2.14, indicating that an increase in the combination of age and attitude was associated with approximately 2.14 times higher odds of the outcome. The Interest×Attitude (B=1.01; p=0.004; OR=2.87) and Interest×Knowledge (B=0.92; p=0.002; OR=2.55) interactions were the strongest predictors,

indicating the important role of interest when combined with both attitude and knowledge. The Culture×Attitude (p=0.030; OR=2.33) and Culture×Knowledge (p=0.032; OR=1.93) interactions were also significant. Meanwhile, Age×Knowledge was borderline (p=0.055; OR=1.83). A negative constant (B=-3.00; p=0.002) indicates low baseline probability. Model fit is adequate: Nagelkerke R²=0.25 and the Hosmer-Lemeshow test is insignificant ($\chi^2=5.67$; p=0.76), indicating good model fit.

Table 3. Multivariate analysis Logistic Regression Analysis

Independent Variable X dependent	B	SE	Wald	p-value	Exp(B)
Age × Attitude	0.74	0.35	4.50	0.034	2.14
Age × Knowledge	0.59	0.30	3.84	0.055	1.83
Interest × Attitude	1.01	0.35	8.35	0.004	2.87
Interest × Knowledge	0.92	0.30	9.33	0.002	2.55
Culture × Attitude	0.69	0.32	4.68	0.030	2.33
Culture × Knowledge	0.64	0.30	4.58	0.032	1.93
Constant	-3.00	1.00	9.00	0.002	0.05

Diagnostic Test

Pseudo R² (Nagelkerke)= 0.25

Hosmer-Lemeshow test: $\chi^2= 5.67$, p=0.76

The demographic profile of the study participants reveals important patterns that align with existing literature on herbal medicine use among adolescents. The age distribution, with 52.3% of respondents aged 12-13 years and 47.7% aged 14-16 years, represents a critical developmental period where health behaviors and attitudes are being formed. This finding is consistent with research indicating that adolescence is a formative period for health-related decision-making and knowledge acquisition (Kury et al., 2023).

The socioeconomic characteristics of the study population, particularly the finding that 55.4% of parents had incomes below the minimum wage and 49.2% worked in the informal sector, provide crucial context for understanding herbal medicine use patterns. This economic profile aligns with previous research demonstrating that economic factors significantly influence herbal medicine utilization (Ogbole et al., 2023). The predominance of lower-income families in this study population may explain the interest in herbal medicine as an alternative healthcare option, as herbal medicines are often perceived as more affordable and accessible compared to conventional treatments (Adipere et al., 2023; Elechi-Amadi et al., 2021).

The distribution of knowledge levels among participants, with 41.5% having "sufficient" knowledge, 30.8% having "poor" knowledge, and 27.7% having "good" knowledge, reflects a concerning gap in adolescent understanding of herbal medicine. This pattern is mirrored in the attitude distribution, where 43.1% demonstrated "sufficient" attitudes, 33.8% showed "less" favorable attitudes, and only 23.1%

exhibited "good" attitudes toward herbal medicine consumption. These findings are consistent with research indicating that knowledge about herbal medicines is positively correlated with their use and that adequate knowledge enhances positive attitudes toward herbal medicine (Izzati et al., 2021; Kristianto et al., 2022).

The relatively low proportion of participants with "good" knowledge and attitudes suggests a need for targeted educational interventions. This is particularly important given that knowledge serves as a foundation for informed decision-making regarding herbal medicine use. The moderate knowledge levels observed in this study align with findings from other populations where familiarity with medicinal herbs was not very high, often attributed to lack of education and awareness of their benefits (Krsnik & Erjavec, 2024).

The bivariate analysis revealed that age was significantly associated with both knowledge (p=0.045; OR=1.80) and attitude (p=0.032; OR=2.10), indicating that older adolescents within the study age range had greater odds of possessing better knowledge and more positive attitudes toward herbal medicine. This finding is supported by multivariate analysis, where age remained significant for attitude (B=0.74; p=0.034; OR=2.10) but was borderline significant for knowledge (B=0.59; p=0.055; OR=1.80). These results are consistent with literature suggesting that older age is associated with higher use and more positive attitudes toward herbal medicine (Harfiani et al., 2025; Kury et al., 2023).

Interest emerged as the most significant predictor of both knowledge and attitudes in this study. The

bivariate analysis showed that interest was associated with knowledge ($p=0.001$; $OR=2.50$) and attitude ($p=0.005$; $OR=2.75$), while multivariate analysis confirmed these relationships with interest predicting attitude ($B=1.01$; $p=0.004$; $OR=2.75$) and knowledge ($B=0.92$; $p=0.002$; $OR=2.50$). This finding underscores the critical role of personal motivation and engagement in health-related learning and attitude formation. The strength of this association suggests that interventions aimed at increasing interest in herbal medicine could be particularly effective in improving both knowledge and attitudes among adolescents.

The prominence of interest as a predictor aligns with behavioral theories suggesting that attitude toward behavior is one of the most important predictors of health behavior intention (Iddrisu et al., 2023). This finding has important implications for health education programs, suggesting that strategies to enhance interest and engagement may be more effective than purely information-based approaches.

Culture demonstrated significant associations with both knowledge ($p=0.020$; $OR=1.90$) and attitude ($p=0.010$; $OR=2.00$) in bivariate analysis, with these relationships maintained in multivariate analysis for both attitude ($B=0.69$; $p=0.030$; $OR=2.00$) and knowledge ($B=0.64$; $p=0.032$; $OR=1.90$). This finding highlights the important role of cultural norms and customs in shaping adolescent perspectives on herbal medicine use. The cultural influence observed in this study is consistent with research indicating that cultural factors significantly impact health behaviors and treatment preferences (Mazrouei et al., 2022; Zaidi et al., 2022).

The balanced distribution of cultural variables (50.8% high vs. 49.2% low) in the study population, combined with their significant predictive power, suggests that cultural background serves as an important determinant of herbal medicine knowledge and attitudes. This finding emphasizes the need for culturally sensitive health education approaches that acknowledge and build upon existing cultural beliefs and practices.

Interestingly, parental income and occupation did not show significant relationships with knowledge or attitudes in this study ($p>0.05$ for both variables). This finding contrasts with some previous research suggesting that socioeconomic factors influence herbal medicine use patterns (Adipere et al., 2023). However, this result may be explained by the relatively homogeneous socioeconomic profile of the study population, where the majority of families had below-minimum-wage incomes and worked in informal sectors. The lack of significant variation in socioeconomic status may have limited the ability to

detect associations between these variables and the outcomes of interest.

The multivariate logistic regression model demonstrated adequate performance with a Nagelkerke R^2 of 0.25, indicating moderate explanatory power. The non-significant Hosmer-Lemeshow test ($p=0.76$) suggests good model calibration. The negative constant ($B=-3.00$; $p=0.002$) indicates a low baseline probability of positive attitudes when predictor variables are at their reference levels, highlighting the importance of the identified predictors in determining outcomes.

The moderate explanatory power of the model suggests that while age, interest, and culture are important predictors, other factors not measured in this study may also contribute to adolescent knowledge and attitudes toward herbal medicine. Future research should consider additional variables such as peer influence, media exposure, healthcare provider attitudes, and family health practices (Tangkiatkumjai et al., 2020; Wongves et al., 2023).

The findings of this study have several important implications for public health practice and policy. First, the identification of interest as the strongest predictor suggests that health education programs should focus on engaging adolescents and fostering genuine interest in herbal medicine rather than simply providing information. This approach aligns with evidence suggesting that healthcare professionals' attitudes significantly influence prescribing behavior and intention.

Second, the significant role of cultural factors indicates that health promotion interventions should be culturally tailored and should acknowledge existing cultural beliefs and practices related to herbal medicine use. This is particularly important given that cultural sensitivity can enhance the effectiveness of health education programs. Third, the age-related differences in knowledge and attitudes suggest that developmental considerations should be incorporated into health education curricula. Younger adolescents may require different educational approaches compared to older adolescents, with age-appropriate content and delivery methods.

Conclusion

This study shows that adolescent knowledge and attitudes toward the use of herbal medicine are significantly predicted by age, interest, and culture, with interest being the biggest predictor. The results emphasize the significance of creating focused, age-appropriate, and culturally relevant interventions to enhance teenage comprehension and attitudes around the use of herbal medicines. The necessity for comprehensive health education programs that go

beyond merely providing information to actively engage teenagers and build upon their cultural settings and developmental needs is highlighted by the population's modest knowledge levels and varied opinions.

Acknowledgments

Thank you to all the respondents who participated in this study

Author Contributions

Conceptualization, N.S. and I.U.; methodology, N.S. and I.U.; formal analysis, N.S.; investigation, N.S. and I.U.; resources, I.U.; data curation, N.S.; writing—original draft, N.S.; writing—review and editing, I.U.; visualization, N.S.; supervision, I.U.; project administration, N.S. and I.U.; funding acquisition, I.U. All authors have read and approved the final version of the manuscript for publication.

Funding

No external Funding.

Conflicts of Interest

The authors declare no conflict of interest.

References

- Adipere, E., Epem, U., Ogala, H., Bonnie, G. K., Okpoko, V. O., Onuche, I. N., & Fullpower, E. T. (2023). Prevalence and Patterns of Herbal Medicine Use in Bayelsa State: Potential Customers Victimology Insight for Behavioural Forensics. *International Journal of Research and Innovation in Applied Science*, VIII(V), 57–64. <https://doi.org/10.51584/ijrias.2023.8506>
- Bashirian, S., Barati, M., Karami, M., Hamzeh, B., & Ezati, E. (2020). Predictors of Shisha Smoking Among Adolescent Female in Western Iran in 2019 Using a Prototype-Willingness Model. *Tobacco Prevention & Cessation*, 6(August). <https://doi.org/10.18332/tpc/125357>
- Didarloo, A., Khalili, S., Aghapour, A. A., Moghaddam-Tabrizi, F., & Mousavi, S. M. (2022). Determining Intention, Fast Food Consumption and Their Related Factors Among University Students by Using a Behavior Change Theory. *BMC Public Health*, 22(1). <https://doi.org/10.1186/s12889-022-12696-x>
- Dupuis, J. B., Ndiaye, A., Lo, N. B., Thiam, E. H. M., Sall, M., & Blaney, S. (2024). Individual and Environmental Determinants of the Consumption of Iron-Rich Foods Among Senegalese Adolescent Girls: A Behavioural Model. *Adolescents*, 4(3), 396–409. <https://doi.org/10.3390/adolescents4030028>
- Elechi-Amadi, K. N., Briggs, O. N., Konne, F. E., Giami, L. K., & Ajufo, B. C. (2021). Perception and Acceptance of Herbal Medicines Among Residents of Port Harcourt, Nigeria. *Journal of Complementary and Alternative Medical Research*, 24–34. <https://doi.org/10.9734/jocamr/2020/v12i330209>
- Eny, T., M., R., Suriah, S., Syafar, M., Amiruddin, R., Yahya, M., & Mallongi, A. (2023). Health Literacy Using Snakes and Ladders on HIV/AIDS Knowledge and Attitudes Among Adolescents. *Journal of Law and Sustainable Development*, 11(10), 1418. <https://doi.org/10.55908/sdgs.v11i10.1418>
- Gupte, H., Mandal, G., & Chatterjee, N. (2022). Sociodemographic Factors, Attitudes, and Tobacco Use Among Adolescent Areca-Nut Users in Mumbai, India. *Indian Journal of Community Medicine*, 48(1), 183–186. https://doi.org/10.4103/ijcm.ijcm_432_22
- Harfiani, E., Puspita, R., & Ramadhani, I. (2025). Herbal Medicine Usage During the COVID-19 Pandemic in Indonesia: Trends and Determinants. *The Scientific World Journal*, 1. <https://doi.org/10.1155/tswj/1639500>
- Haynes-Maslow, L., Ray, S., & Giombi, K. (2022). Perceptions of Sugar-Sweetened Beverages Among Adolescents in North Carolina. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.943295>
- Iddrisu, M., Doat, A. R., Abdulai, A. M., & Wuni, A. (2023). They Patronize Herbal Medicine, Coincidence or Planned Behaviour: A Case of Hypertensive Patients in Tamale? *Nursing Open*, 10(8), 5185–5192. <https://doi.org/10.1002/nop2.1754>
- Izzati, I., Marvel, M., & Komala, I. (2021). *The Overview of Knowledge, Belief, and Side Effects of Using Herbal Medicines in South Tangerang*. Banten: Indonesia. <https://doi.org/10.4108/eai.26-10-2020.2311326>
- Kristianto, H., Pramesona, B. A., Rosyad, Y. S., Andriani, L., Putri, T. A. R. K., & Rias, Y. A. (2022). The Effects of Beliefs, Knowledge, and Attitude on Herbal Medicine Use During the COVID-19 Pandemic: A Cross-Sectional Survey in Indonesia. *F1000research*, 11, 483. <https://doi.org/10.12688/f1000research.116496.2>
- Krsnik, S., & Erjavec, K. (2024). Factors Influencing Use of Medicinal Herbs. *Journal of Patient Experience*, 11. <https://doi.org/10.1177/23743735241241181>
- Kury, L. A., Shehhi, H. A., & Hijazi, R. (2023). Use of Herbal Medicine Among the Public in Abu Dhabi. *Arab Journal of Nutrition and Exercise*. <https://doi.org/10.18502/ajne.v7i1.13426>
- Maku, N. O., & Titilayo, O. (2024). Determinants of Reproductive Health Services Utilization Among Female Adolescents in Sangotedo, Eti-Osa East LGA, Lagos State, Nigeria. *International Journal of Public Health and Pharmacology*, 4(1), 8–29. <https://doi.org/10.52589/ijphp-lclciijf>
- Mazrouei, N. A., Meslamani, A. Z. A., Alajeel, R.,

- Alghadban, G., Ansari, N., Kaabi, M. A., & Ibrahim, O. M. (2022). The Patterns of Herbal Medicine Use in the United Arab Emirates; A National Study. *Pharmacy Practice*, 20(3), 01-07. <https://doi.org/10.18549/pharmpract.2022.3.2698>
- Ogbole, O. O., Ipingbemi, A. E., Olayinka, O. O., Akinbobola, E. O., Molik, Z. A., Ajayi, T. O., & Oluyedun, H. A. (2023). Mitigating the Risks of Herb-Drug Interaction Among Artisans in Ibadan Metropolis Through Public Health Education Survey. *Journal of Complementary and Alternative Medical Research*, 24(4), 27-37. <https://doi.org/10.9734/jocamr/2023/v24i4507>
- Oyedeji, O., Wisdom, T., Kintziger, K. W., Cernasev, A., Hohmeier, K. C., Hagemann, T. M., & Gatwood, J. (2024). Health Behavior Frameworks Describing HPV Vaccine Uptake in Adults: A Scoping Review. *Journal of Prevention and Health Promotion*, 5(4), 568-608. <https://doi.org/10.1177/26320770241252935>
- Reinhardt, A., Weber, W., & Rossmann, C. (2022). Drivers of Young Adults' Voluntary Compliance With COVID-19 Protective Measures: Results From a Multi-Method Study. *BMC Public Health*, 22(1). <https://doi.org/10.1186/s12889-022-14752-y>
- Tangkiatkumjai, M., Boardman, H., & Walker, D. (2020). Potential Factors That Influence Usage of Complementary and Alternative Medicine Worldwide: A Systematic Review. *BMC Complementary Medicine and Therapies*, 20(1). <https://doi.org/10.1186/s12906-020-03157-2>
- Wongves, K., Chongcharoen, W., & Chandrachai, A. (2023). Development of Herbal Topical Anesthetic Mucoadhesive Spray for Oral Cavity Using Customer-Centric Approach. *Journal of Human Earth and Future*, 4(3), 274-289. <https://doi.org/10.28991/hef-2023-04-03-02>
- Yanniarti, S., Nurhaliza, S., Baska, D. Y., Widiyanti, D., & Savitri, W. (2023). Compliance With Consuming Blood Supplement Tablets Can Reduce the Incidence of Anemia in Young Women in Bengkulu City. *Jnki (Jurnal Ners Dan Kebidanan Indonesia. Indonesian Journal of Nursing and Midwifery)*, 11(4), 416-429. [https://doi.org/10.21927/jnki.2023.11\(4\).416-429](https://doi.org/10.21927/jnki.2023.11(4).416-429)
- Yuriev, A., Dahmen, M., Paillé, P., Boiral, O., & Guillaumie, L. (2020). Pro-Environmental Behaviors Through the Lens of the Theory of Planned Behavior: A Scoping Review. *Resources Conservation and Recycling*, 155, 104660. <https://doi.org/10.1016/j.resconrec.2019.104660>
- Zaidi, S. F., Saeed, S. A., Khan, M. A., Khan, A., Hazazi, Y., Otayn, M., & Daniyal, M. (2022). Public Knowledge, Attitudes, and Practices Towards Herbal Medicines; A Cross-Sectional Study in Western Saudi Arabia. *BMC Complementary Medicine and Therapies*, 22(1). <https://doi.org/10.1186/s12906-022-03783-y>