

Original Article

The Application of GENRE KIT Snakes and Ladders to Enhance Adolescent Reproductive Health Knowledge: Quasi-Experimental Design



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ABSTRACT

Background: Adolescents constitute a significant portion of the global population and fall within the age range of 10–19 years. During adolescence, individuals undergo various physical, social, emotional, and hormonal changes. A lack of knowledge regarding reproductive health among adolescents is partly attributed to limited access to accurate and comprehensive information. This study aims to evaluate the effectiveness of the GenRe KIT Snakes and Ladders as an interactive educational tool to improve adolescents' knowledge about reproductive health.

Methods: The research design used was a quasi-experimental design, with two groups, pre-test and posttest. The population consisted of adolescents, with a sample of 72 participants selected through simple random sampling. The inclusion criteria were adolescents 14–19 years old. A pretest was conducted before the intervention, followed by a posttest after the intervention. The instrument used was a modified Tentang Kita module by BKKBN, consisting of 21 knowledge and 13 attitude items related to reproductive health. Validity was confirmed with Pearson correlation values ($r = 0.364\text{--}0.807$), and reliability was high, with Cronbach's alpha of 0.889 for knowledge and 0.745 for attitude.

Results: The pre-test score in the intervention group was 13.11 (SD = 1.75) and improved significantly to 19.86 (SD = 1.33) after the intervention ($p < 0.001$). Post-intervention, the intervention group's knowledge score remained substantially higher than the control group's ($p < 0.001$). The between-group effect size (Cohen's $d = 3.48$) indicated a very large effect, confirming the GenRe KIT Snakes and Ladders game's superior effectiveness in enhancing adolescents' reproductive health knowledge compared to traditional lecture-based methods.

Conclusion: GenRe KIT Snakes and Ladders game is effective in increasing adolescents' reproductive health knowledge and shows potential as an engaging educational tool in schools and community-based programs. Despite limitations related to study design, sample scope, and short intervention duration, the findings support further research using larger, more diverse populations and randomized designs to assess long-term impacts and behavioral outcomes.

Keywords: Adolescent Health; Reproductive Health; Educational Media; Health Promotion.

Implications for Practice:

- Utilizing GenRe KIT Snakes and Ladders as an educational tool in community settings can enhance adolescents' knowledge of reproductive health and increase active participation in learning activities.
- Incorporating GenRe KIT Snakes and Ladders into nursing education, especially nursing in the community, can promote more engaging and practical learning, supporting nurses in delivering reproductive health education effectively.

Implications for Practice:

- Adopting game-based learning methods like GenRe KIT Snakes and Ladders in educational and training programs may improve learning efficiency and offer an innovative alternative for community-based health education initiatives.

Introduction

The adolescent population globally reaches 1.2 billion, comprising approximately 18% of the world's population, with an age range of 10–19 years ([WHO, 2024](#)). In Indonesia, the adolescent age group is broader based on the classification from the National Population and Family Planning Agency (BKKBN), which defines adolescents as individuals aged 10–24 years and unmarried. In March 2022, the majority of young people in Indonesia fell within the 19–24 age group (40.10%) and the 25–30 age group (39.56%) ([BPS, 2023](#)). In West Nusa Tenggara Province (NTB), 17.7% of the population (939,732 people) were aged 10–19 years, consisting of 483,881 males (9.08%) and 456,373 females (8.58%) ([BPS, 2023](#)). The large adolescent population in Indonesia is certainly a potential as well as a challenge for the country. When connected with the Demographic Bonus, which will peak in 2025, Teenagers are the most valuable assets for the time being for the front of the nation ([Sumaryani et al., 2023](#)).

Adolescence is marked by significant physical, psychological, social, and hormonal transitions ([Fatimah et al., 2021](#)). These changes underscore the importance of understanding and promoting reproductive health in this age group. However, access to reliable and accurate reproductive health information remains limited in Indonesia, which contributes to low levels of knowledge and underutilization of related health services ([Handayani & Yati, 2020](#)). NTB also reports one of the highest child marriage rates nationally at 16.23% ([BPS, 2023](#)), further

reflecting the urgency of addressing reproductive health education.

While reproductive health encompasses not only biological aspects but also mental, social, and cultural well-being ([Rahmanagara et al., 2024](#)), adolescents' awareness of their reproductive rights is still insufficient. Many are unaware of their right to non-discriminatory education and access to reproductive health services. Conventional methods of health education, such as lectures and printed materials, are still dominant and have shown limited engagement, especially among youth ([Negash et al., 2016](#)).

In response, the National Population and Family Planning Agency (BKKBN) introduced the Generation Planning (GenRe) Program to prepare adolescents for planned family life. One of its strategies includes the use of interactive media, such as the GenRe KIT Snakes and Ladders game, which aims to deliver reproductive health education in a playful and relatable format. The game fosters social interaction, decision-making skills, and knowledge acquisition through gamified learning ([Azizah, 2024](#); [Wadham et al., 2019](#)).

Despite the potential of game-based interventions, critical comparative analysis of similar educational games or interventions remains limited in existing literature. Few studies have evaluated the effectiveness of such tools compared to traditional methods, and there is a lack of discussion on their scalability and adaptability across diverse adolescent populations. Integrating findings from comparative studies of game-based interventions could provide stronger evidence for their utility and inform best

practices for adolescent reproductive health education.

The GenRe KIT Snakes and Ladders serves as an educational medium that fosters positive affective experiences toward topics often perceived as taboo or sensitive by society, particularly among adolescents. Furthermore, this game-based medium enhances adolescents' self-efficacy in understanding and discussing reproductive health issues, thereby promoting sustainable behavior change through active and interactive learning. This approach is closely aligned with the theoretical framework of the Health Promotion Model (HPM) developed by Nola J. Pender, which emphasizes the role of cognitive and affective factors in shaping health-promoting behaviors.

Methods

Study Design

This research employed a quasi-experimental design with a two-group pretest-posttest approach, in which observations were conducted through an initial pretest. The intervention was then administered, followed by a posttest to evaluate changes in adolescents' knowledge before and after the educational treatment. The educational intervention was delivered using the GenRe KIT Snakes and Ladders game. This study aimed to measure the effectiveness of the intervention in increasing adolescents' knowledge of reproductive health. The research was conducted at SMAN 5 Mataram, located in Mataram City, West Nusa Tenggara. The study took place in February 2025, following a schedule set by the school, specifically on February 1st, 8th, 15th, and 22nd.

Participants

This research was conducted at SMAN 5 Mataram, located in West Nusa Tenggara, Indonesia. The total population in this study consisted of 636 students, distributed

across grades X, XI, and XII. The researchers employed a multistage sampling technique due to the large population and the existence of proportionally stratified subgroups. In the first stage, cluster random sampling was used to select one senior high school from the Mataram City area. The list of schools was obtained from the Provincial Education Office, and the randomly selected school was SMAN 5 Mataram. In the second stage, the number of respondents from each grade level (X, XI, XII) was determined using proportionate stratified random sampling, considering the heterogeneous nature of the population and its distribution across different grade levels. In the final stage, the researchers used simple random sampling to select the students from each grade, using a digital tool (*Spinwheel*) to ensure fairness in the selection process. The inclusion criteria were Adolescents aged 14–19 years old, Willing to participate in the study, and Available during the data collection period. The exclusion criteria included students who did not provide consent, were absent due to illness, permission, or exams during data collection. Based on this process, a final sample of 72 students was obtained.

Instruments

This research has two variables: the independent variable and the dependent variable. The independent variable in this research is GenRe KIT Snakes and Ladders, and the dependent variable is knowledge. The instrument in this study used a modified questionnaire in BKKBN to ensure its relevance in measuring reproductive health knowledge, with a validity test conducted using the Pearson correlation at a 5% significance level and 95% confidence level. The critical r-value (r-table) for $n = 36$ was 0.361. The reproductive health knowledge questionnaire consisted of 21 statement items, all of which were found to be valid, with r-calculated values ranging from 0.436 to 0.807.

The reliability test for the knowledge and attitude questionnaire on reproductive health was conducted with 36 respondents. The 21 knowledge items showed high reliability with a Cronbach's alpha of 0.889 (>0.6), and the 13 attitude items also demonstrated acceptable reliability with a Cronbach's alpha of 0.745 (>0.6). For the reproductive health attitude questionnaire, all 13 statement items were declared valid, with r -calculated values ranging from 0.364 to 0.663.

Data Collection

After getting respondents according to the criteria, 72 respondents were gathered in the classroom and were explained the research procedure. The intervention began with greetings, introductions, and time agreement between the facilitator and participants. Participants were then given an overview of the GenRe KIT Snakes and Ladders, including how to play and the reproductive health topics covered. After that, they completed a consent form and a pre-test to assess baseline knowledge.

The intervention was then delivered using the GenRe KIT Snakes and Ladders educational game, conducted in a 60-minute session, held once per week for four consecutive weeks (on February 1, 8, 15, and 22, 2025). The intervention was facilitated by a trained peer educator who held an official peer educator certification and had been specifically prepared to deliver reproductive health education to adolescents. Following the final intervention session, participants completed the posttest questionnaire. The researcher ensured that all items in the pre- and posttest instruments were derived from a modified version of the "Tentang Kita" module by BKKBN, and that implementation fidelity was maintained throughout the sessions.

Data Analysis

Data analysis was conducted using both univariate and bivariate approaches. Univariate analysis was used to describe the demographic characteristics of the respondents. Bivariate analysis was used to assess the effect of the educational intervention on reproductive health knowledge and attitudes. The Shapiro-Wilk test was employed to evaluate data normality, as each group had fewer than 50 participants. The decision criterion was based on a p -value > 0.05 , indicating that the data were normally distributed. For bivariate analysis, comparisons of pretest and posttest scores within each group were conducted. For normally distributed data, a paired sample t -test was used. The data presented as a table is then analyzed using SPSS 17.

Ethical Considerations

This study has adhered to the ethical standards set by the Health Research Ethics Committee of the Faculty of Health Sciences, Universitas Brawijaya, with the approval number 13261/UN10.F17.10.4/TU/2024, and informed consent was secured from all participants, ensuring confidentiality, voluntary participation, and the right to withdraw at any time without consequence.

Results

Table 1 presents the demographic characteristics and comparative knowledge scores of respondents in both the intervention and control groups. Of the total 72 adolescents, the majority were female (56.9%), and the predominant age was 16 years (36.1%), followed by 17 years (31.9%).

Before the intervention, the mean pre-test knowledge score was significantly higher in the intervention group (13.11 ± 1.75) compared to the control group (11.83

± 1.54 ; $p = 0.002$). Following the intervention, both groups showed significant improvement in knowledge scores ($p < 0.001$); however, the posttest score in the intervention group (19.86 ± 1.33) remained substantially higher than in the control group (14.69 ± 1.62), indicating superior effectiveness of the GenRe KIT Snakes and Ladders intervention.

The within-group mean knowledge gain was 6.75 points (95% CI: 5.76–7.08; $p < 0.001$) for the intervention group and 2.86

points (95% CI: 2.40–3.25; $p < 0.001$) for the control group. The calculated effect sizes further confirmed these differences, with a very large effect in the intervention group (Cohen's $d = 3.84$) compared to a large impact on the control group (Cohen's $d = 1.82$). Between-group comparison of post-intervention scores also revealed a statistically significant difference ($p < 0.001$) with a very large effect size (Cohen's $d = 3.48$), supporting the efficacy of game-based learning over traditional lectures.

Table 1. Characteristics and Knowledge Scores of Respondents Before and After Intervention (n = 72)

Variable	Group	n (%) / Mean $\pm$ SD	p-value
Gender	Male	31 (43.1)	
	Female	41 (56.9)	
Age (years)	14	3 (4.2)	
	15	13 (18.1)	
	16	26 (36.1)	
	17	23 (31.9)	
	18	7 (9.7)	
Knowledge Scores			
Pre-test	Intervention	13.11 $\pm$ 1.75	0.002
	Control	11.83 $\pm$ 1.54	
Posttest	Intervention	19.86 $\pm$ 1.33	<0.001
	Control	14.69 $\pm$ 1.62	
Mean Difference	Intervention	6.75 (CI: 5.76–7.08)	<0.001*
	Control	2.86 (CI: 2.40–3.25)	<0.001*
Effect Size (Cohen's d)	Intervention	3.84	
	Control	1.82	
Between-group Comparison (posttest)	-	-	<0.001*
Between-Group Effect Size	-	3.48	

Note: *Data are presented as mean $\pm$ standard deviation (SD) for continuous variables and number (percentage) for categorical variables. CI = confidence interval; * = statistically significant at $p < 0.05$.



Picture 1. GenRe KIT Snake and Ladder Games



Picture 2. GenRe KIT Snake and Ladder Media

Discussion

Adolescent reproductive health encompasses the well-being of the reproductive system, its functions, and

related processes, including mental, social, and cultural aspects (Mareti & Nurasa, 2022). However, adolescents' knowledge of reproductive health remains insufficient, as they have limited exposure to relevant

information. Additionally, many adolescents do not utilize available reproductive health services, and access to service centers providing such information is still limited (Negash et al., 2016). Adolescents must understand their reproductive rights so they recognize that they hold primary control over their bodies. In Indonesia, many teenagers are still unaware of these rights, including their entitlement to education free from gender discrimination and access to reproductive health information.

Adolescence is a critical transition period from childhood to adulthood, where rapid growth occurs, including reproductive function, thus affecting changes in physical, mental, and social role development. The large proportion of adolescents means that they need to be prepared to become healthy individuals, both physically, mentally, and spiritually. Several studies have revealed that adolescents have quite serious problems during their transition period. These problems are not only about reproductive health but also related to the Three Basic Threats to Adolescent Reproductive Health (TRIADKRR). TRIAD KRR are three basic threats to reproductive health that are at risk for adolescents, namely Sexuality, Human Immunodeficiency Virus (HIV), Acquired Immune Deficiency Syndrome (AIDS), and narcotics, alcohol, psychotropics, and other addictive substances (NAPZA) (Rahmanda & Putri, 2024).

Promotive and preventive efforts for adolescent reproductive health materials need to be improved. One of the current obstacles is limited access to adolescent reproductive health services (Wakjira & Habedi, 2022). Currently, the number of health facilities continues to grow, but health services have not been running optimally, especially around access to reproductive health. This is in line with other studies related to the behavior of

utilizing reproductive health services in the low category (8.4%) (Novitriasti et al., 2020). Therefore, more effective and engaging educational approaches are needed to bridge this gap (Fatimah et al., 2021).

One such approach is the GenRe KIT, a visual media tool developed by BKKBN. This media employs interactive educational games like *Snakes and Ladders* to deliver reproductive health information in a more engaging and relatable way. The game-based method is especially appealing to adolescents due to its entertaining, competitive nature, which fosters a relaxed learning environment. It has been observed that such methods improve adolescents' comprehension and retention of information, particularly when compared to traditional lecture-based approaches (Edi & Taufik, 2019).

In this study, a statistically significant improvement in knowledge was observed among students at SMAN 5 Mataram following the intervention using the GenRe KIT *Snakes and Ladders* media ($p < 0.05$). The improvement was attributed to the use of interactive and visually engaging media, which simplified the learning process and fostered more active participation (Edi & Taufik, 2019; Nurbaya & Simon, 2019).

Comparable studies support this finding. For instance, (Lisnawati, 2021) and (Khaerina, 2022) demonstrated that educational games positively influence both knowledge and attitudes toward reproductive health. These findings align with the concept that interactive media helps adolescents internalize sensitive topics more comfortably. However, it must be noted that while the studies show improvements in knowledge and attitude, behavioral changes were not directly measured; hence, no conclusive claims about long-term behavior modification can be made. Further supporting evidence from (Putri, 2019) showed an increase in post-intervention

knowledge using video-based media, while this study achieved similar results using a more participatory method. The average knowledge score increased from 11.83 to 14.69 after one month of education with GenRe KIT Ular Tangga, indicating that game-based media is effective in improving adolescents' reproductive health knowledge.

Nonetheless, although an increase in knowledge was evident, no significant improvement in attitude was observed within the one-month intervention period. This aligns with ([Wulan Sari et al., 2022](#)), who argued that attitude change typically requires sustained and repeated exposure at least over 66 days, to form lasting shifts in perspective. Thus, the duration of exposure in this study may not have been sufficient to induce attitudinal transformation.

This study presents a novel approach to adolescent reproductive health education through the development and contextual adaptation of the GenRe KIT Ular Tangga. Unlike earlier works that focused solely on general knowledge or attitudes, this study integrated specific indicators such as knowledge of reproductive anatomy, menstruation, nocturnal emissions, fertility, and access to information into a structured educational game format, thereby enhancing relevance and engagement. Additionally, the transformation of a traditional game into an educational tool grounded in GenRe BKKBN content reflects a culturally appropriate innovation. This approach makes reproductive health topics more accessible and acceptable for adolescents, especially in discussing sensitive issues like sexuality.

Despite these promising findings, several limitations must be acknowledged. First, participants were aware they were being observed and assessed, which could have introduced a Hawthorne effect, where individuals modify their behavior due to awareness of being studied. Second, the

intervention period of one month may have been insufficient to capture changes in deeper outcomes such as attitudes or long-term behavioral intentions. Future studies should consider longitudinal designs with randomized control groups and extended intervention periods to more accurately assess the sustained impact of game-based reproductive health education on both knowledge and behavior.

Relevance to Clinical Practice

The findings of this study highlight the potential of integrating game-based educational interventions, such as the GenRe KIT Snakes and Ladders, into adolescent-focused community nursing services to improve knowledge about reproductive health. This interactive approach can be adopted as a supplemental educational tool during school health programs (UKS), youth-friendly health service (PKPR) visits, or routine community outreach activities led by public health nurses.

To ensure sustainable integration into nursing practice, nurses can be trained as facilitators in using the GenRe KIT and incorporate it into peer education sessions, reproductive health campaigns, or counseling programs in schools and youth centers. Additionally, nurses can collaborate with local stakeholders—including schools, youth organizations, and the BKKBN—to implement this intervention periodically, allowing reinforcement of information over time. Embedding this game-based learning into regular health promotion strategies may enhance adolescent engagement, reduce stigma associated with reproductive health discussions, and foster a more open, participatory learning environment.

For long-term sustainability, community health centers (Puskesmas) can include this intervention in their adolescent health service protocols and allocate

resources for materials and training. Monitoring and evaluation mechanisms should also be established to track knowledge retention and identify areas for improvement. Overall, this intervention supports more adolescent-friendly, age-appropriate, and engaging health education, aligned with the goals of promotive and preventive community nursing.

Conclusion

This study concludes that the GenRe KIT Snakes and Ladders is effective in increasing adolescents' knowledge of reproductive health. The intervention shows promise as an engaging educational tool that can be utilized in school settings to facilitate reproductive health education. Additionally, this game-based media can be adopted by nurses and other health professionals as part of community-based adolescent education programs, offering an interactive and youth-friendly approach to health promotion.

However, this study has several limitations. The quasi-experimental design without randomization may introduce potential selection bias, and the sample was limited to students from a single school, which may affect the generalizability of the findings. Furthermore, the short intervention period may not be sufficient to observe long-term retention of knowledge or actual behavioral change. The study also did not evaluate behavioral outcomes, such as utilization of reproductive health services or changes in decision-making.

Future research is recommended to include a larger and more diverse adolescent population across multiple regions, implement randomized controlled trials for more robust evidence, and assess long-term impacts on attitudes and behaviors. Additionally, studies could explore the integration of digital or hybrid formats of game-based interventions to broaden accessibility and engagement.

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CrediT Authorship Contributions Statement

Ckristy: Conceptualization, Methodology, Supervision, Writing – Original Draft

Diana: Investigation, Resources, Data Curation, Project Administration

Sarifah: Formal Analysis, Validation, Writing – Review & Editing, Visualization

Conflicts Of Interest

The authors declare no potential conflicts of interest in this study.

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References

- Azizah, F. K. (2024). The Influence of the Use of Educational Game Learning Media "Snake and Ladder" on Mathematics Learning Outcomes Elementary School Students. 16(2).
- BPS. (2023). Badan Pusat Statistik (BPS) Republik Indonesia. <https://www.bps.go.id/id/publication/2023/12/29/18781f394974f2cae5241318/statistik-pemuda-indonesia-2023.html>
- Edi, E., & Taufik, M. (2019). Permainan Ular Tangga Sebagai Media Edukasi Seksualitas Remaja. *Jurnal Endurance*, 4(2), 442. <https://doi.org/10.22216/jen.v4i2.4280>
- Fatimah, J. M., Arianto, & Bahfiarti, T. (2021). Media communication and youth reproductive health, North Toraja District. *Gaceta Sanitaria*, 35,

- S112–S115.
<https://doi.org/10.1016/j.gaceta.2021.07.007>
- Handayani, N., & Yati, D. (2020). Gambaran pengetahuan orang tua tentang kesehatan reproduksi remaja retardasi mental. 3.
- Khaerina, R. (2022). The Effect Of Snakes and Ladders Game On Prevention Of Premarital Pregnancy On Knowledge and Attitudes of Junior High School Students. *Jambura Journal of Health Sciences and Research*, 4, 60–69.
<https://doi.org/10.35971/jjhsr.v4i0.12528>
- Lisnawati, L. (2021). Pengaruh pendidikan teman sebaya berbasis genre kit dibanding modul terhadap peningkatan pengetahuan tentang kesehatan reproduksi remaja di kota cirebon. *Jurnal Medikes (Media Informasi Kesehatan)*, 8(2), 213–222.
<https://doi.org/10.36743/medikes.v8i2.225>
- Mareti, S., & Nurasa, I. (2022). Tingkat Pengetahuan Remaja Tentang Kesehatan Reproduksi Di Kota Pangkalpinang. *Jurnal Keperawatan Sriwijaya*, 9(2), 25–32.
<https://doi.org/10.32539/jks.v9i2.154>
- Negash, S., Sheppard, N. V. N., Lambert, N. M., & Fincham, F. D. (2016). Trading Later Rewards for Current Pleasure: Pornography Consumption and Delay Discounting. *The Journal of Sex Research*, 53(6), 689–700.
<https://doi.org/10.1080/00224499.2015.1025123>
- Novitriasti, T., Kusumawati, A., & Musthofa, S. B. (2020). Pemanfaatan konseling kesehatan reproduksi pada pkpr wilayah kerja puskesmas bulu lor. *JURNAL KESEHATAN MASYARAKAT*, 8.
- Nurbaya, S., & Simon, M. (2019). Pengaruh penerapan pendidikan seks (media ular tangga) terhadap kemampuan pencegahan kekerasan seksual pada anak jalanan di kampung savana kota makassar. *Journal of Islamic Nursing*, 4(2), 60.
<https://doi.org/10.24252/join.v4i2.10203>
- Putri, F. L. (2019). Efektivitas penggunaan media video dan ular tangga terhadap tingkat pengetahuan kesehatan reproduksi siswa kelas xi.
- Rahmanagara, A. D. P., Khasanah, U., & Yusuf, A. (2024). Overview of Students' Knowledge Levels Regarding Adolescent Reproductive Health at Senior High School 1 Tasikmalaya, Indonesia. *GHMJ (Global Health Management Journal)*, 7(4), 221–226.
<https://doi.org/10.35898/ghmj-741029>
- Rahmanda, A. S., & Putri, I. M. (2024). Gambaran Tingkat Pengetahuan Tentang Tiga Ancaman Dasar Kesehatan Reproduksi Remaja (TRIAD KRR). 6(1).
- Sumaryani, S., Astuti, R. K., & Setyaningsih, R. (2023). The Importance of Adolescent Reproductive Organ Care: Tips and Tricks for Future Health. *Proceeding International Conference of Community Service*, 1(1), 369–376.
<https://doi.org/10.18196/iccs.v1i1.61>
- Wadham, E., Green, C., Debattista, J., Somerset, S., & Sav, A. (2019). New digital media interventions for sexual health promotion among young people: A systematic review. *Sexual Health*.
<https://doi.org/10.1071/SH18127>
- Wakjira, D. B., & Habedi, D. (2022). Barriers to access and utilisation of sexual and reproductive health services among adolescents in Ethiopia: A sequential mixed-methods study. *BMJ Open*, 12(11), e063294.
<https://doi.org/10.1136/bmjopen-2022-063294>
- WHO. (2024, January 25). World Health Organization.
https://www.who.int/health-topics/adolescent-health#tab=tab_1

Wulan Sari, N., Yuniliza, Y., & Rovendra, E.
(2022). Pengaruh Edukasi Dengan
Media Ular Tangga Terhadap
Pengetahuan Dan Sikap Remaja
Tentang Kesehatan Reproduksi. *Journal
of Health Educational Science And
Technology*, 5(2), 115–126.
<https://doi.org/10.25139/htc.v5i2.4559>