Analysis of Knowledge, Attitude, and Environmental Support Factors on Clean and Healthy Living Behavior (PHBS) Among Students of STIKes Widya Dharma Husada Tangerang

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Abstract: This study explores the influence of knowledge, attitude, and environmental support on Clean and Healthy Living Behavior (PHBS) among students of STIKes Widya Dharma Husada Tangerang. As a preventive health strategy, PHBS plays a crucial role in shaping student awareness and promoting well-being within academic settings. Utilizing a quantitative approach with a survey method, the research examines how each factor contributes both individually and collectively to behavioral outcomes. The results indicate that knowledge, attitude, and environmental support significantly affect students' engagement in PHBS. Among these, attitude emerges as the most influential determinant. The study underscores the need for continuous health education, positive attitude formation, and an enabling environment on campus to foster sustainable healthy living behaviors. These findings highlight the importance of integrated health promotion strategies in higher education institutions. Future research is encouraged to incorporate additional factors such as personal motivation and digital media influence in the context of health behavior change.

Keywords: Clean and Healthy Living Behavior (PHBS), Knowledge, Attitude, Environmental Support, Health Promotion

INTRODUCTION

The pursuit of a healthy lifestyle is becoming increasingly relevant in the context of global public health challenges. One of the most fundamental approaches to achieving improved health outcomes is through Clean and Healthy Living Behavior (PHBS), which emphasizes preventive measures rooted in individual awareness and environmental support. According to the Indonesian Ministry of Health (Kemenkes RI, 2020), PHBS refers to a set of conscious behaviors practiced by individuals, families, and communities to improve their health status. For students in higher education, adopting PHBS is especially critical as it shapes both their present and future well-being.

Young adults, particularly college students, often face transitional life stages filled with academic demands, lifestyle changes, and evolving social environments. These dynamics can either encourage or hinder their ability to practice healthy behaviors. Notoatmodjo (2010) asserts that knowledge about health significantly influences the

likelihood of individuals engaging in preventive actions. However, knowledge alone is insufficient without a positive attitude and conducive environmental support.

Attitude has been widely recognized as a pivotal psychological component that influences behavior. Azwar (2015) describes attitude as a predisposition to respond positively or negatively toward a specific object, person, or situation. In the context of health, a student who holds a favorable attitude toward cleanliness, hygiene, and disease prevention is more likely to act accordingly. This reinforces the importance of addressing internal factors such as beliefs and perceptions alongside external influences.

Environmental support plays an equally important role in facilitating behavior change. Green and Kreuter (1980) emphasize that behavior is not formed in isolation but is deeply embedded in one's surroundings. In a university setting, the availability of hygiene facilities, peer influence, campus regulations, and access to health information all contribute to shaping students' health-related behaviors. When these factors are aligned, the likelihood of consistent PHBS adoption is significantly increased.

Despite growing awareness, many students still struggle to maintain PHBS in daily routines. Simple actions such as handwashing, disposing of waste properly, and consuming clean water are often overlooked due to time constraints, lack of motivation, or the absence of environmental support. This gap between knowledge and action highlights the need to explore the multifactorial nature of health behaviors within academic institutions.

Several studies have investigated the determinants of health behavior among adolescents and young adults, yet there remains a lack of focused research within the specific context of tertiary education in Indonesia. Understanding how knowledge, attitude, and environmental factors intersect can provide valuable insights for developing effective health promotion programs tailored for university students. As suggested by Glanz et al. (2015), multi-level interventions are most effective when they address both individual determinants and structural enablers.

The STIKes Widya Dharma Husada Tangerang campus presents an appropriate setting for examining these variables, given its commitment to health education and student development. However, anecdotal observations reveal that PHBS practices are not consistently upheld by students, despite institutional campaigns and educational efforts. This paradox raises important questions about what truly drives behavior change in a university context.

This study, therefore, aims to analyze the influence of knowledge, attitude, and environmental support on PHBS among university students. By focusing on these three key variables, the research seeks to uncover which factors are most strongly associated with positive behavioral outcomes and where gaps may exist in current interventions. The findings are expected to contribute to the development of more targeted and sustainable health promotion strategies within higher education.

Ultimately, promoting PHBS in academic settings is not only a matter of improving individual health but also a broader effort to instill lifelong habits that support public health goals. As stated by World Health Organization (2015), educational institutions are strategic platforms for initiating health-conscious behaviors that extend into adulthood. By investing in evidence-based interventions at the university level, we can cultivate a generation of health-aware individuals who contribute positively to their communities.

RESEARCH METHOD

This study employed a quantitative research approach with a survey design to investigate the influence of knowledge, attitude, and environmental support on Clean and Healthy Living Behavior (PHBS) among university students. The quantitative method was chosen to allow for statistical analysis of measurable relationships between variables and to capture patterns of behavior that could be generalized within the study population. A structured questionnaire served as the primary instrument for data collection, enabling the researchers to gather consistent and comparable data from all participants.

The population of this research consisted of active students at STIKes Widya Dharma Husada Tangerang. These students were considered an appropriate target group given their academic background in health-related disciplines, which implies a basic exposure to health knowledge and practices. To ensure relevance and focus, purposive sampling was used to select participants who met specific criteria, including enrollment status and willingness to engage in health-related assessments. A total of fifty-two students were successfully recruited as respondents.

The instrument used in this study was a Likert-scale questionnaire, which measured responses across a continuum ranging from strong agreement to strong disagreement. The questionnaire was developed based on existing literature and adapted to fit the context of student life and PHBS practices. It comprised four main sections: demographic data, knowledge about PHBS, attitudes toward PHBS, and perceived environmental support for

healthy behavior. A final section measured the students' actual practice of PHBS, such as handwashing, waste disposal, and healthy food consumption.

Before full deployment, the instrument underwent validity and reliability testing. Content validity was assessed through expert judgment to ensure the questions were appropriate and relevant. Statistical validity was then tested using Pearson's correlation to compare item scores with total scores. Reliability was examined through Cronbach's Alpha, where values above the accepted threshold indicated that the instruments were consistent and dependable for use in the field.

Data collection was conducted over a specified period, during which students were invited to complete the questionnaire in person. Ethical considerations were strictly observed; informed consent was obtained, and participants were assured of their anonymity and the voluntary nature of their involvement. The data were then compiled and processed using statistical software to ensure accuracy and efficiency in analysis.

For the data analysis, the researchers applied multiple linear regression to evaluate the influence of independent variables, knowledge, attitude, and environmental support, on the dependent variable, which is the practice of PHBS. Prior to running the regression model, a series of classical assumption tests were conducted, including normality, multicollinearity, heteroscedasticity, and autocorrelation tests. These steps were essential to ensure that the model met statistical assumptions and that the conclusions drawn were valid.

The normality test, using both graphical and statistical methods, confirmed that the data followed a normal distribution. Multicollinearity was checked through tolerance and Variance Inflation Factor (VIF) values, ensuring no significant overlap among predictors. Similarly, heteroscedasticity and autocorrelation tests showed that the data met the necessary assumptions for linear regression. These diagnostics reinforced the reliability of the results produced by the regression analysis.

RESULT AND DISCUSSION

Validity Test

The validity test was conducted by comparing the calculated correlation value (r count) with the critical value (r table). At a significance level of 5% and a sample size of 52 (degrees of freedom = 50), the r table value was determined to be 0.273. If the r count exceeds this value, the item is considered valid.

Table 1. Validity Test Results

Variable	Item Code	r Count	r Table	Description
Knowledge (X1)	X1.1	0.777	0.273	Valid
	X1.2	0.677	0.273	Valid
	X1.3	0.622	0.273	Valid
	X1.4	0.788	0.273	Valid
	X1.5	0.729	0.273	Valid
Attitude (X2)	X2.1	0.856	0.273	Valid
	X2.2	0.713	0.273	Valid
	X2.3	0.846	0.273	Valid
	X2.4	0.786	0.273	Valid
	X2.5	0.84	0.273	Valid
Environmental Support (X3)	X3.1	0.762	0.273	Valid
	X3.2	0.808	0.273	Valid
	X3.3	0.862	0.273	Valid
	X3.4	0.851	0.273	Valid
	X3.5	0.581	0.273	Valid
Clean and Healthy Living Behavior (Y)	Y1	0.739	0.273	Valid
	Y2	0.802	0.273	Valid
	Y3	0.793	0.273	Valid
	Y4	0.809	0.273	Valid
	Y5	0.698	0.273	Valid

It can be concluded that all r count values exceed the r table threshold, indicating that each statement is valid. Therefore, all questionnaire items are deemed capable of accurately measuring the variables of Knowledge, Attitude, and Environmental Support toward Clean and Healthy Living Behavior (PHBS) among students of STIKes Widya Dharma Husada Tangerang.

Reliability Test

The reliability test was conducted to assess the consistency of respondents' answers across items designed to measure the variables of Knowledge, Attitude, and Environmental Support in relation to Clean and Healthy Living Behavior (PHBS) among students of STIKes Widya Dharma Husada Tangerang.

Table 2. Reliability Test Results

Research Variable	Cronbach's Alpha	Description
Knowledge	0.749	Reliable
Attitude	0.864	Reliable
Environmental Support	0.831	Reliable

Research Variable	Cronbach's Alpha	Description
Clean and Healthy Living Behavior (PHBS)	0.81	Reliable

Since all Cronbach's Alpha values exceed the threshold of 0.70, each variable used in this study is considered reliable. This indicates that respondents provided consistent answers to all items measuring the variables of Knowledge, Attitude, and Environmental Support related to Clean and Healthy Living Behavior (PHBS) among students of STIKes Widya Dharma Husada Tangerang.

Descriptive Statistics Test

Table 3. Descriptive Statistics

| Variable	N	Minimum	Maximum	Sum	Mean	Std. Error	Std. Deviation
Knowledge	52	17	25	1175	22.6	0.306	2.207
Attitude	52	20	25	1221	23.48	0.257	1.852
Environmental Support	52	17	25	1154	22.19	0.323	2.327
Clean and Healthy Living Behavior (PHBS)	52	18	25	1219	23.44	0.246	1.776
Valid N (listwise)	52						

Based on Table 3, the results of the descriptive statistical analysis involve four measured variables across 52 respondents, namely Knowledge, Attitude, Environmental Support, and Clean and Healthy Living Behavior (PHBS). Each variable demonstrates a relatively high range between minimum and maximum values, indicating that respondents' scores tend to be within a moderate to high level. The Knowledge variable shows a minimum value of 17 and a maximum of 25, with a mean score of 22.6. This indicates that respondents generally possess a good level of knowledge regarding clean and healthy living behaviors. The standard deviation of 2.207 and standard error of 0.306 suggest a moderate level of variation in knowledge scores among participants.

The Attitude variable demonstrates the highest mean score at 23.48, with minimum and maximum scores of 20 and 25, respectively. This indicates that respondents have a very positive attitude toward clean and healthy living behaviors. The relatively lower

standard deviation of 1.852 reflects a more homogeneous distribution in respondents' attitudes. For the Environmental Support variable, the mean score is 22.19, showing that the perceived environmental support is relatively adequate, although not the highest among all variables. This variable has the highest standard deviation (2.327), indicating greater variability in perceived environmental support among respondents. Lastly, the Clean and Healthy Living Behavior (PHBS) variable has a mean score of 23.44 with the smallest standard deviation at 1.776. This suggests that respondents demonstrate high and relatively consistent clean and healthy behavior practices.

Data Normality

A regression model is considered normally distributed if the data points in the normal probability plot align closely with the diagonal line, and the significance value from the one-sample Kolmogorov-Smirnov test is greater than 0.05. According to Ghozali, this indicates that the residuals follow a normal distribution.
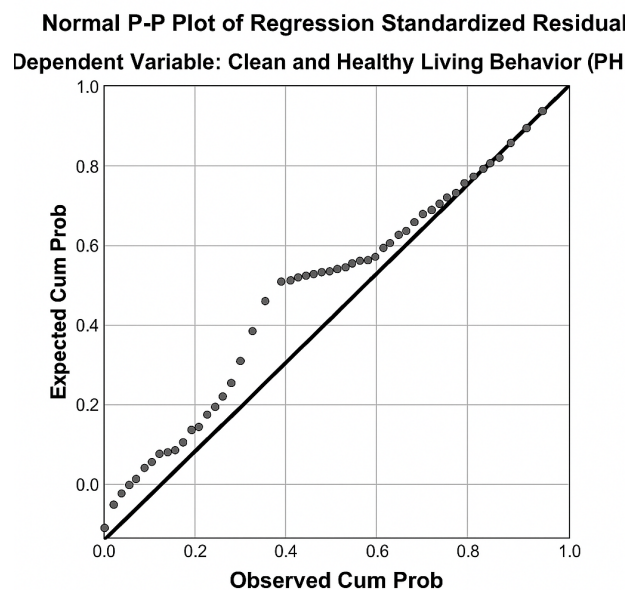
Figure 1. Normality Test – P-P Plot of Standardized Residuals

It can be observed that the plotted points follow or closely align with the diagonal line. Therefore, it can be concluded that the residual values are normally distributed.

Table 4. Data Normality Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		52
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.19882791
Most Extreme Differences	Absolute	.152
	Positive	.078
	Negative	-.152
Test Statistic		.152
Asymp. Sig. (2-tailed)		.061[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Based on the results, the Asymp. Sig. (2-tailed) value is 0.061. Since 0.061 is greater than 0.050, it can be concluded that the data is normally distributed.

Multicollinearity

To test for multicollinearity, the Variance Inflation Factor (VIF) and tolerance values for each independent variable must be examined. According to Ghozali, if the VIF value is less than 10 and the tolerance value is greater than 0.10, it can be concluded that the data is free from multicollinearity.

Table 5. Coefficients and Multicollinearity Test Results

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Tolerance	VIF
	B	Std. Error	Beta			
(Constant)	6.653	2.258	—	2.947	0.005	—
Knowledge	0.25	0.117	0.311	2.137	0.038	0.449
Attitude	0.401	0.128	0.419	3.131	0.003	0.531
Environmental Support	0.077	0.11	0.101	3.701	0.001	0.454

a. Dependent Variable: Clean and Healthy Living Behavior (PHBS)

The table shows that the Knowledge variable has a tolerance value of 0.449 and a VIF of 2.225, the Attitude variable has a tolerance of 0.531 and VIF of 1.883, and the Environmental Support variable has a tolerance of 0.454 and VIF of 2.203. Since all

tolerance values are greater than 0.10 and all VIF values are less than 10.00, it can be concluded that there is no indication of multicollinearity among the variables.

Heteroscedasticity

The heteroscedasticity test is assessed using a scatterplot. If the data points are randomly spread above and below the Y-axis without forming a clear pattern, it indicates that heteroscedasticity is not present in the regression model.

Scatterplot

Dependent Variable: Clean and Healthy Living Behavior (PHBS)
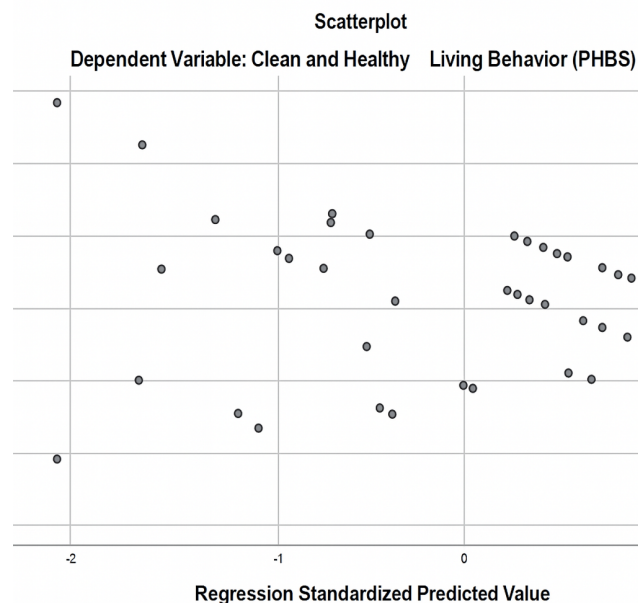
Figure 2. Scatterplot of Regression Standardized Residuals vs. Standardized Predicted Values

It can be concluded that the scatterplot points are randomly dispersed below and above zero on the Y-axis and do not form any specific pattern. This indicates that heteroscedasticity is not present in the data.

Autocorrelation

Autocorrelation testing was conducted using the Durbin-Watson test by comparing the calculated Durbin-Watson value (d) with the critical values from the Durbin-Watson table, namely the upper bound (dU) and lower bound (dL). There is no indication of autocorrelation if the Durbin-Watson value lies between dU and (4 – dU).

Table 6. Model Summary Including Durbin-Watson Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.738	0.544	0.516	1.236	2.388

a. Predictors: (Constant), Environmental Support, Attitude, Knowledge
b. Dependent Variable: Clean and Healthy Living Behavior (PHBS)

Based on the output, the following can be concluded

a. The upper and lower bounds for the Durbin-Watson test are determined using k = 3 predictors and N = 52 observations at a 5% significance level.

b. The result shows that dL (1.420) < Durbin-Watson (2.388) > (4 – dU) (2.327).

c. Therefore, it can be concluded that there is an indication of autocorrelation in the model.

t-Test (Partial)

The partial t-test was conducted to compare the calculated t-value (t count) with the critical t-value (t table) at a significance level of 0.05. If the t count is greater than the t table, or if the significance value is less than 0.05, it can be concluded that the independent variables (X1, X2, and X3) significantly affect the dependent variable (Y). To determine the t table value, the degrees of freedom (df) must be calculated using the formula: df = n – k, where n is the number of observations and k is the number of variables (independent and dependent).

Table 6. Coefficients of Partial t-Test Results

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
(Constant)	6.653	2.258	—	2.947
Knowledge	0.25	0.117	0.311	2.137
Attitude	0.401	0.128	0.419	3.131
Environmental Support	0.077	0.11	0.101	3.701

a. Dependent Variable = Clean and Healthy Living Behavior (PHBS)

Partial t-Test Results:

a. The *Knowledge* variable has a t-value of 2.137, which is greater than the t-table value of 1.676, and a significance level of 0.038, which is less than 0.05. This indicates that

knowledge has a significant effect on Clean and Healthy Living Behavior (PHBS) among students of STIKes Widya Dharma Husada Tangerang.

b. The *Attitude* variable shows a t-value of 3.131 > 1.676 and a significance level of 0.003 < 0.05, meaning that attitude also has a significant influence on PHBS among the students.

c. The *Environmental Support* variable has a t-value of 3.701 > 1.676 and a significance level of 0.001 < 0.05, indicating a significant impact of environmental support on students' PHBS.

F-Test (Simultaneous Test)

Table 7. ANOVA – Simultaneous F-Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	87.53	3	29.177	19.107	0,000
Residual	73.297	48	1.527		
Total	160.827	51			

a. Dependent Variable: Clean and Healthy Living Behavior (PHBS)
b. Predictors: (Constant), Environmental Support, Attitude, Knowledge

Based on the F-test, the calculated F-value of 19.107 is greater than the F-table value of 2.79, with a significance level of 0.000, which is less than 0.05. This indicates that the regression model is valid and can be used to predict Clean and Healthy Living Behavior (PHBS). In other words, knowledge, attitude, and environmental support have a significant simultaneous effect on PHBS among students of STIKes Widya Dharma Husada Tangerang.

Coefficient of Determination (R²)

Table 8. Model Summary – Coefficient of Determination (R²)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.738	0.544	0.516	1.236

a. Predictors: (Constant), Environmental Support, Attitude, Knowledge
b. Dependent Variable: Clean and Healthy Living Behavior (PHBS)

The R square value of 0.544 indicates that 54.4% of the variation in Clean and Healthy Living Behavior (PHBS) among students of STIKes Widya Dharma Husada Tangerang

can be explained by knowledge, attitude, and environmental support. The remaining 45.6% is influenced by other factors not examined in this study.

CONCLUSION

This study examined the influence of knowledge, attitude, and environmental support on Clean and Healthy Living Behavior (PHBS) among students at STIKes Widya Dharma Husada Tangerang. The findings revealed that each of these three factors significantly contributes to shaping students' health-related behavior. Knowledge enables individuals to understand the importance of healthy practices, while a positive attitude reinforces the willingness to act on that understanding. Environmental support, including facilities, peer influence, and institutional policies, serves as an essential enabler that facilitates consistent behavioral outcomes.

Through statistical analysis, it was confirmed that the model is valid and that all independent variables have both partial and simultaneous effects on the dependent variable. The proportion of explained variance demonstrates a strong predictive capability, underscoring the importance of integrating educational, psychological, and environmental elements in health promotion programs. Furthermore, the data met key classical assumptions, including normality and the absence of multicollinearity and heteroscedasticity, though a slight indication of autocorrelation was observed and should be considered in future research. Overall, the study highlights the need for a comprehensive approach that not only informs but also shapes students' attitudes and provides an enabling environment to sustain healthy living behaviors in academic institutions. These findings offer practical implications for policy-making and health education strategies in universities.

REFERENCES

Anggraini, H. (2025). Determinasi perilaku hidup bersih dan sehat (PHBS) di lingkungan sekolah dasar. *Unisan Jurnal*, *4*(4), 28–36.

Ariani, L. (2018). Faktor-faktor yang mempengaruhi praktik perilaku hidup bersih dan sehat pada mahasiswa kos di Padukuhan Karangmalang Yogyakarta. *Jurnal Kesehatan Indonesia*, *8*(3), 128–134.

Azwar, S. (2015). *Sikap manusia: Teori dan pengukurannya*. Yogyakarta: Pustaka Pelajar.

Chrisnawati, Y., & Suryani, D. (2020). Hubungan sikap, pola asuh keluarga, peran orang tua, peran guru dan ketersediaan sarana dengan perilaku hidup bersih dan sehat. *Jurnal Ilmiah Kesehatan Sandi Husada*, *9*(2), 1101–1110.

Fuady, I., Prasanti, D., & Indriani, S. S. (2020). Penerapan teori plan behavior: Faktor yang mempengaruhi niat perilaku hidup bersih dan sehat. *Jurnal Berkala Kesehatan*, *6*(1), 24–30.

Green, L. W., & Kreuter, M. W. (1980). *Health promotion planning*. Mayfield Publishing.

Julianingsih, V., Karjoso, T. K., & Harahap, E. S. (2020). Faktor-faktor yang berhubungan dengan PHBS di Pekanbaru. *Health Care: Jurnal Kesehatan*, *9*(1), 9–16.

Karim, D. S. P. (2018). Determinan perilaku hidup bersih dan sehat (PHBS) tatanan rumah tangga. *Jurnal Ilmu Kesehatan Masyarakat*, *7*(01), 1–9.

Kemenkes RI. (2020). *Pedoman perilaku hidup bersih dan sehat (PHBS)*. Jakarta: Kementerian Kesehatan Republik Indonesia.

Maharwati, N. K., & Dinatha, N. M. (2023). Strategi kepala sekolah dalam menerapkan pendidikan kesehatan melalui perilaku hidup bersih dan sehat pada anak usia dini. *Jurnal Ilmiah Pendidikan Citra Bakti*, *10*(1), 57–69.

Mustar, Y. S., Susanto, I. H., & Bakti, A. P. (2018). Pendidikan kesehatan: Perilaku hidup bersih dan sehat (PHBS) di sekolah dasar. *Jurnal Ilmu Sosial dan Pendidikan*, *2*(2), 2598–9944.

Notoatmodjo, S. (2010). *Ilmu perilaku kesehatan*. Jakarta: Rineka Cipta.

Puteri, N. S., Azwar, E., & Fahdhienie, F. (2023). Faktor yang berhubungan dengan perilaku hidup bersih dan sehat (PHBS) pada rumah tangga. *Afiasi: Jurnal Kesehatan Masyarakat*, *8*(2), 472–480.

Romziah, S., & Tri Bhawono, D. (n.d.). Dilemmas and solution of beef cattle farming on global warming impacts. In Dr. R. Azizah, SH, M. Kes (Ed.), *Prosiding Seminar Nasional*, 123.

Sari, C. F., & Agustina, D. (2023). Faktor yang mempengaruhi perilaku hidup bersih dan sehat (PHBS) dalam membangun gaya hidup sehat pada proses pembelajaran sejak dini usia 9–11 tahun SD Negeri 101765 Bandar Setia Kec. Percut Sei Tuan. *G-Couns: Jurnal Bimbingan dan Konseling*, *7*(2), 281–289.

Sari, N. I., Widjanarko, B., & Kusumawati, A. (2016). Faktor-faktor yang berhubungan dengan perilaku hidup bersih dan sehat sebagai upaya untuk pencegahan penyakit diare pada siswa di SDN Karangtowo Kecamatan Karangtengah Kabupaten Demak. *Jurnal Kesehatan Masyarakat*, *4*(3), 1051–1058.

Suryani, L., & Payung, S. (2017). Faktor-faktor yang mempengaruhi perilaku hidup bersih dan sehat (PHBS) siswa/i Sekolah Dasar Negeri 37 Kecamatan Tampan Kota Pekanbaru. *Jurnal Keperawatan Abdurrab*, *1*(2), 17–28.

Warjiman, W., Theresia, I., & Indra, W. (2019). Characteristics and quality of life of patients with hypertension in Puskesmas Teluk Tiram Kota Banjarmasin. *Jurnal Kesehatan Masyarakat*.

Wulandari, R., Romadhon, M., & Mustakim, M. (2022). Analisis faktor yang berhubungan dengan perilaku hidup bersih dan sehat (PHBS) di wilayah kerja Puskesmas Bandar Agung Kabupaten Musi Banyuasin tahun 2021. *Jurnal Kesehatan Terapan*, *9*(1), 1–7.