



Self-regulation, subjective well-being, and healthy lifestyle behaviors among student-athletes in Indonesia

Autorregulación, bienestar subjetivo y hábitos de vida saludables entre los estudiantes-deportistas de Indonesia

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Abstract

Introduction: Student athletes often face significant health challenges such as stress, sleep deprivation, and mental strain.

Objective: This study was conducted to examine the role of self-regulation and subjective well-being in influencing healthy lifestyle behaviors in student athletes in Indonesia.

Methodology: The method used is quantitative with multiple linear regression and simple linear regression designs. The sample involved in this study amounted to 255 Indonesian student athletes using accidental sampling techniques. The research instruments consisted of The Self-Regulation Questionnaire (SRQ), Satisfaction with Life Scale (SWLS) and Positive and Negative Affect Schedule (PANAS), and The Health-Promoting Lifestyle Profile II.

Results: The major hypothesis was rejected, suggesting that self-regulation and subjective well-being, when considered jointly, do not significantly predict healthy lifestyle behaviors among student athletes ($F = 2.166$, $p = 0.117$). The findings revealed that hypothesis 1 was supported, as self-regulation significantly predicted healthy lifestyle behaviors ($t = 2.006$, $p = 0.046$). In contrast, minor hypothesis 2 was not supported, indicating that subjective well-being did not significantly predict healthy lifestyle behaviors ($t = -0.432$, $p = 0.666$).

Discussion: Healthy lifestyle behaviors among student athletes may be difficult to achieve when self-regulation and subjective well-being are applied simultaneously. Meanwhile, self-regulation can partially be a predictor of healthy lifestyle behaviors. In contrast, subjective well-being does not partially predict healthy lifestyle behaviors.

Conclusions: The role of self-regulation on the healthy lifestyle behaviors of Indonesian student athletes encourages the need to design a holistic self-regulation program from the student athletes themselves, starting from daily, weekly, monthly, or annual activities, which will help student athletes' resilience when carrying out their roles. This also helps student athletes to realize healthy lifestyle behaviors as a whole, which then results in optimal self-quality.

Keywords

Self-regulation; subjective well-being; healthy lifestyle behaviors; student-athlete

Resumen

Introducción: Los estudiantes deportistas se enfrentan a menudo a importantes problemas de salud, como el estrés, la falta de sueño y la tensión mental.

Objetivo: Este estudio se llevó a cabo para examinar el papel de la autorregulación y el bienestar subjetivo en la influencia de los comportamientos de estilo de vida saludable en los estudiantes atletas en Indonesia.

Metodología: El método utilizado es cuantitativo con diseños de regresión lineal múltiple y regresión lineal simple. La muestra utilizada en este estudio ascendió a 255 estudiantes deportistas indonesios mediante técnicas de muestreo accidental. Los instrumentos de investigación fueron el Cuestionario de Autorregulación (SRQ), la Escala de Satisfacción con la Vida (SWLS) y la Escala de Afectos Positivos y Negativos (PANAS), así como el Perfil del Estilo de Vida Promotor de la Salud II.

Resultados: Se rechazó la hipótesis principal, lo que sugiere que la autorregulación y el bienestar subjetivo, cuando se consideran conjuntamente, no predicen de manera significativa los comportamientos de estilo de vida saludable entre los estudiantes atletas ($F = 2,166$, $p = 0,117$). Los resultados revelaron que la hipótesis 1 se confirmaba, ya que la autorregulación predecía significativamente los comportamientos de estilo de vida saludable ($t = 2,006$, $p = 0,046$). Por el contrario, la hipótesis secundaria 2 no se confirmó, lo que indica que el bienestar subjetivo no predecía significativamente los comportamientos de estilo de vida saludable ($t = 0,432$, $p = 0,666$).

Discusión: Los hábitos de vida saludables entre los estudiantes deportistas pueden ser difíciles de alcanzar cuando se aplican simultáneamente la autorregulación y el bienestar subjetivo. Por otra parte, la autorregulación puede ser, en parte, un indicador de los hábitos de vida saludables. Por el contrario, el bienestar subjetivo no predice parcialmente los comportamientos de estilo de vida saludable.

Conclusiones: El papel de la autorregulación en el comportamiento de vida saludable de los estudiantes deportistas indonesios fomenta la necesidad de diseñar un programa holístico de autorregulación desde los propios estudiantes deportistas, empezando por las actividades diarias, semanales, mensuales o anuales, lo que ayudará a la resiliencia de los estudiantes deportistas a la hora de desempeñar sus funciones. Esto también ayuda a los estudiantes deportistas a realizar comportamientos de vida saludables en su conjunto, lo que luego se traduce en una autocalidad óptima.

Palabras clave

Autorregulación; bienestar subjetivo; conductas de estilo de vida saludable; estudiante-atleta



Introduction

The participation of student-athletes in sports presents various complex challenges, such as maintaining a balance between the demands of sports, academics, and a healthy lifestyle. Nisa and Jannah (2021) argue that student-athletes must undergo thorough preparation and training to meet these demands. High-quality training is necessary to ensure that the training process is effective for student-athletes. Hidayat et al. (2023) state that the quality and success of the sports training process are influenced by physical, technical, tactical, and psychological aspects. Proper physical and psychological preparation is essential for student-athletes to effectively carry out their training activities.

According to a study in the United States reported by Believe Perform (2024), it was found that 10-15% of student-athletes experience psychological issues requiring counseling. Additionally, 20% of student-athletes are prone to mental health issues such as depression and social anxiety, leading to substance abuse, particularly alcohol. The study also found that female student-athletes are at a higher risk of developing bulimia (8%) and anorexia (1.5%) compared to 2% of non-athlete students. Female student-athletes are more vulnerable to eating disorders and weight-related anxiety, while male student-athletes tend to normalize smoking and alcohol consumption as a way to cope with pressure (Zhou et al., 2022).

Following up on the findings above, the researcher conducted a pre-research survey involving 30 student-athlete informants between May and June 2024. The survey revealed that 28 informants (93.3%) consumed alcohol and smoked to reduce stress and anxiety. This behavior was driven by the pressure to maintain their eligibility status by meeting the expectations of their supporters, creating stress to achieve success in competitions and cope with injuries that disrupted their training routine. Furthermore, 15.3% of the informants acknowledged experiencing conflicts with teammates, excessive training intensity, and harsh coaching, where coaches used inappropriate language and failed to motivate athletes to improve. These issues align with research by Egan (2019), which found that symptoms of anxiety, mood disorders, eating behavior challenges, substance use, alcohol consumption, and abuse or violence based on sexual orientation often serve as stressors, leading to poor healthy lifestyle behaviors among student-athletes.

Walker and Hill (1996) define healthy lifestyle behavior as a pattern of activities or behaviors initiated by self-motivation, helping individuals maintain their health and personal development. According to Walker and Hill (1996), six components shape healthy lifestyle behavior: (1) Nutrition, which relates to athletes' food consumption to support their well-being and health; (2) Physical activity, which involves regular exercise to maintain fitness and health; (3) Stress management, which activates psychological and physical resources to effectively reduce tension; (4) Health responsibility, which refers to the obligation of student-athletes to maintain their well-being; (5) Spiritual growth, which focuses on developing inner resources through transcendence and connection; and (6) Interpersonal relationships, which involve communication to foster intimacy and meaningful personal relationships.

Student-athletes who engage in unhealthy behaviors—such as alcohol and tobacco consumption, lack of physical activity, and failure to adopt a positive outlook on life—are likely to experience negative impacts on their physical and mental health, potentially shortening their lifespan (Çetin & Gümüş, 2023). These unhealthy habits not only reduce athletic performance but also pose serious health risks due to the negative behavioral patterns they reinforce. Conversely, student-athletes who adopt healthy lifestyle behaviors—such as getting adequate sleep, engaging in regular physical activity, maintaining a nutritious diet, and reducing unhealthy behaviors like alcohol and tobacco consumption—can enhance their resilience and mental health (Maenhout et al., 2020).

Life as a student-athlete presents unique challenges in fulfilling responsibilities in sports, particularly in maintaining physical health, emotional stability, and focus on achieving success in their athletic careers (Anggara & Laksmiwati, 2022). Student-athletes are required to balance their healthy lifestyle behaviors, which are influenced by two major factors: personal factors and demographic factors (Shaheen et al., 2015). Personal factors include biological, psychological, and sociocultural aspects, which are general individual traits impacting health behaviors, such as age, personality structure, race, ethnicity, and socioeconomic status. Demographic factors refer to individual characteristics that directly or indirectly influence health-promoting behaviors through cognition and specific behavioral effects. Additionally, a



study by Tey et al. (2018) suggests that strong self-regulation and high subjective well-being are significant predictors of engagement in healthy lifestyle behaviors.

Self-regulation is the ability to develop, plan, and implement behaviors flexibly in response to changing realities to achieve goals (Miller & Brown, 1999). Miller and Brown (1999) outline seven components of self-regulation: (1) receiving relevant information, (2) evaluating information and comparing it to norms, (3) initiating change, (4) exploring alternatives, (5) formulating a plan, (6) implementing the plan, and (7) assessing the effectiveness of the plan. High self-regulation enhances the ability to manage oneself, maintain well-being, and support mental health. Conversely, low self-regulation makes individuals more susceptible to external stimuli, such as social stressors, addiction, and physical illness (Gajda et al., 2022). Poor self-regulation is evident in the inability to control thoughts, emotions, and motivation, leading to unhealthy behaviors throughout life (López-Gil et al., 2020). Self-regulation techniques help athletes manage their focus and energy to avoid stressors, allowing them to perform at their best (Augustus et al., 2024). A study by Rogowska & Tataruch (2024) highlights the crucial role of self-regulation in maintaining both physical and psychological health, which ultimately determines athletic performance.

Another key factor in this study is subjective well-being (SWB), which is defined as an individual's subjective perception of their life as meaningful and valuable, with a focus on positive rather than negative thoughts and activities (Diener et al., 2018). Diener et al. (2018) identify two components of SWB: (1) cognitive evaluation, which includes life satisfaction, and (2) emotional responses, which reflect the balance between pleasant positive emotions and unpleasant negative emotions. Individuals with good SWB are more likely to experience better physical and mental health, as they tend to engage in health-promoting behaviors such as exercising, avoiding smoking, and reducing alcohol consumption (Diener et al., 2018). On the other hand, individuals with poor SWB often experience unhappiness, negative thoughts and emotions, anxiety, anger, depression, and lower levels of physical activity (Cho et al., 2020; Martín-María et al., 2020). Research by Bae et al. (2021) suggests that SWB significantly impacts student-athletes' health, as it is mediated by fulfilling basic psychological needs and developing life skills, leading to better mental, emotional, and physical well-being.

The ability to adopt and evaluate a healthy lifestyle helps student-athletes maintain their health and stamina. Self-regulation in student-athletes is associated with better mental health, reduced stress, improved psychological well-being, and increased physical activity (Alonso-Martínez et al., 2021; Crawford et al., 2023). Meanwhile, subjective well-being contributes to academic and athletic performance satisfaction and predicts a lower risk of injury—as injuries can lead to academic struggles, stress, sleep disturbances, and reduced physical activity (von Rosen & Heijne, 2021).

Student athletes have a responsibility to maintain the balance of their bodies' health. This research examines self-regulation, subjective well-being, and healthy lifestyle behavior, which are still major problems in the lives of student athletes in Indonesia. The study from Chao et al. (2023) emphasizes the importance of empirical exploration in the world of sports on an ongoing basis to understand the concrete problems that occur. In line with that, Wijaya and Huwae (2024) also emphasize that the issue of healthy lifestyle behaviors of student athletes in Indonesia is still full of complex problems and even detrimental to the student athletes themselves, so a study is needed on what internal factors are predictors, including self-regulation and subjective well-being factors. This condition is also in line with the freedom of student athletes outside the coaching center, so they tend to show unhealthy and uncontrolled behaviors that pose a bad risks in their daily lives. This dynamic is the background of the importance of measuring the healthy lifestyle behavior of Indonesian student athletes based on the influence of self-regulation and subjective well-being factors. This study aims to examine the predictive of self-regulation and subjective well-being on healthy lifestyle behaviors among student athletes in Indonesia. Then, the hypothesis proposed consists of 3, namely:

1. Self-regulation and subjective well-being jointly predict healthy lifestyle behaviors in student athletes in Indonesia.
2. Self-regulation predicts healthy lifestyle behaviors in student athletes in Indonesia.
3. Subjective well-being predicts healthy lifestyle behavior in student athletes in Indonesia.

Method

Participants

The participants in this study consisted of student-athletes who were actively pursuing their education, ranging from junior high school students to university students in Indonesia. The researcher employed the accidental sampling technique, utilizing interpersonal connections within the target population to expand the data source progressively. The criteria for participation in this study included being a junior high school student, senior high school student, or university student in Indonesia while simultaneously being engaged as an athlete. A total of 255 participants met these criteria.

All research participants were required to complete an informed consent form before participating in the study. The informed consent form provided a summary of the research and details regarding the participants' involvement. Participants were then given the option to agree (if they wished to participate) or leave the form blank (if they declined participation). Those who agreed were directed to fill in personal information, including initials, gender, student status, years of athletic experience, and sports specialization (Table 1).

Table 1. Demographics of Research Participants

Participant Classification	Description	Frequency	Percentage
Gender	Male	166	65.1%
	Female	89	34.9%
	Total	255	100%
Student Status	Junior High School	9	3.7%
	Senior High School	57	22.2%
	University Student	189	74.1%
	Total	255	100%
Years as an Athlete	< 1 year	38	14.8%
	1 year	19	7.4%
	2 years	42	16.7%
	3 years	38	14.8%
	4 years	19	7.4%
	5 years	19	7.4%
	> 5 years	80	31.5%
	Total	255	100%
Sports Specialization	Volleyball	28	11%
	Basketball	24	9.3%
	Futsal	47	18.5%
	Badminton	71	27.8%
	Soccer	28	11%
	Martial Arts (Taekwondo, Muay Thai, Karate, Kickboxing, Pencak Silat, Judo, Kempo, etc.)	47	18.6%
	Fencing	5	1.9%
	Long-Distance Running	5	1.9%
	Total	255	100%

Procedure

The study utilized four psychological scales: the self-regulation scale, the subjective well-being scale (SWLS and PANAS), and the healthy lifestyle behaviors scale. Before distribution, the scales underwent construct validity testing and content validity testing through expert judgment conducted by three professionals. Validation conducted by expert judgment aims to see the suitability in the context of Indonesian culture. The three research scales were then piloted on 80 Indonesian student athletes outside the research participants.

The next steps included obtaining research permits and preparing informed consent forms. The study was conducted using both online (Google Forms) and offline questionnaire distribution methods. Data collection took place from September 20, 2024, to October 25, 2024. As an incentive, participants had the chance to win a reward of IDR 50,000, which was awarded to 10 lucky participants through a lottery system. This research has passed the eligibility test by the ethics commission of Universitas Muhammadiyah Malang Indonesia with the number E.6.m/217/KE.Fpsi-UMM/X/2024.



Instrument

Self-Regulation Scale

Self-regulation was measured using The Self-Regulation Questionnaire (SRQ) developed by Brown et al. (1999), based on Miller and Brown's (1991) seven self-regulation stages: receiving relevant information, evaluating information and comparing it to norms, triggering change, searching for options, formulating a plan, implementing the plan, and assessing the plan's effectiveness. The original self-regulation scale consisted of 63 statement items with both favorable and unfavorable statements, using a five-point Likert scale: Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. The scale was translated and adjusted by the researcher for the study's context and was validated by expert judgment, resulting in a refined version with 35 items. The validity test confirmed that all 35 items met the criteria, with item-total correlations ranging from 0.311-0.707, and a Cronbach's Alpha coefficient of 0.905.

Subjective Well-Being Scale

Subjective well-being was measured using the Satisfaction With Life Scale (SWLS) developed by Diener et al. (1985) and the Positive and Negative Affect Schedule (PANAS) developed by Watson et al. (1988). Both instruments were adapted into Indonesian by Akhtar (2019). The SWLS contained five statement items rated on a seven-point Likert scale: Strongly Disagree, Disagree, Slightly Disagree, Neutral, Slightly Agree, Agree, and Strongly Agree. The PANAS consisted of 20 items, with 10 items measuring positive affect and 10 items measuring negative affect, using a five-point Likert scale: Never, Rarely, Sometimes, Often, and Very Often. The researcher adjusted the SWLS and PANAS scales to fit the context of the study and validated by expert judgment. The validity test results showed that all SWLS items were retained (5 items) with item-total correlations ranging from 0.435 to 0.719, and a Cronbach's Alpha of 0.802. Similarly, all PANAS items were retained (20 items) with item-total correlations ranging from 0.412 to 0.719, and a Cronbach's Alpha coefficient of 0.837.

Healthy Lifestyle Behaviors Scale

Healthy lifestyle behaviors were measured using The Health-Promoting Lifestyle Profile II, developed by Walker and Hill (1996). This instrument is based on six dimensions of healthy lifestyle behaviors identified by Walker and Hill (1996): physical activity, health responsibility, stress management, interpersonal relations, spiritual growth, and nutrition. The 30-item scale was translated into Indonesian and adapted for student-athletes by Wijaya and Huwae (2024). The healthy lifestyle behaviors scale consisted of favorable statements rated on a four-point Likert scale: Always, Often, Sometimes, and Never. The validity test confirmed that all 30 items met the criteria, with item-total correlations ranging from 0.330 to 0.614, and a Cronbach's Alpha coefficient of 0.902.

Data Analysis

The data in this study was analyzed using multiple linear regression analysis techniques. The data analysis process was conducted with the help of the IBM Statistical Program for Social Science (SPSS) 25 version for Windows.

Results

Descriptive Statistical Analysis

The descriptive statistical results presented in Table 2 summarize data from 255 participants across four main variables. The first variable, self-regulation, shows a score range of 37–148, with a mean of 115.02 and a standard deviation of 16.286. The second variable, SWLS, has a score range of 10–35, with a mean of 24.80 and a standard deviation of 5.952. The third variable, PANAS, shows a score range of 34–100, with a mean of 70.74 and a standard deviation of 12.967. Finally, the fourth variable, healthy lifestyle behaviors, has a score range of 65–120, with a mean of 91.68 and a standard deviation of 12.967.

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Self-Regulation	255	37	148	115.02	16.286



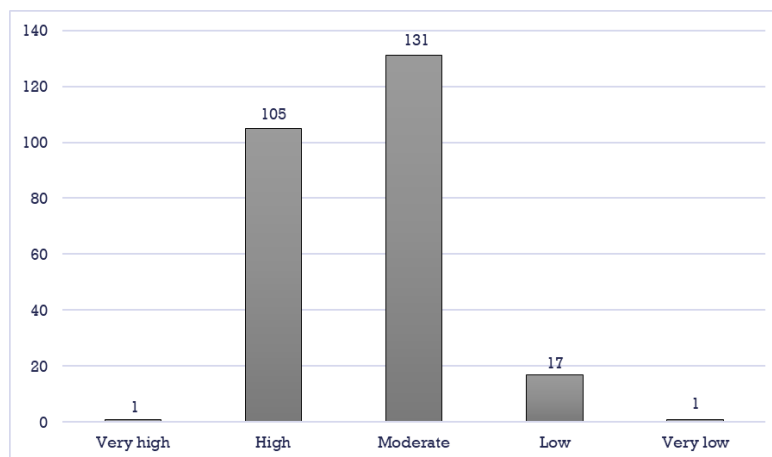
SWLS	255	10	35	24.80	5.952
PANAS	255	34	100	70.74	14.406
Healthy Lifestyle Behaviors	255	65	120	91.68	12.967

Following the descriptive statistical analysis, the researcher categorized the scores of the studied variables. The results, as presented in Table 3 and Diagram 1, indicate that the self-regulation levels of the 255 participants were classified into five categories: very high, high, moderate, low, and very low. Specifically, 1 participant (0.4%) was categorized as very high, 105 participants (41.2%) as high, 131 participants (51.3%) as moderate, 17 participants (6.7%) as low, and 1 participant (0.4%) as very low. Based on the mean score, the majority of participants fell into the moderate category of self-regulation.

Table 3. Categorization of Self-Regulation Variable

Interval	Category	Frequency	Percentage
$147 \leq x \leq 175$	Very High	1	0.4%
$119 \leq x < 147$	High	105	41.2%
$91 \leq x < 119$	Moderate	131	51.3%
$63 \leq x < 91$	Low	17	6.7%
$35 \leq x < 63$	Very Low	1	0.4%
Total		255	100%

Figure 1. Self-regulation categorization data distribution

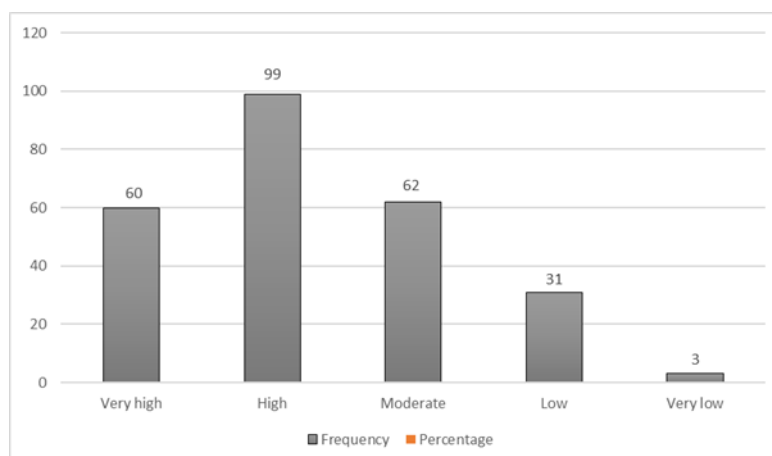


The categorization results presented in Table 4 and Diagram 2 indicate that the subjective well-being levels of the 255 participants were distributed across five categories. Specifically, 60 participants (23.5%) were classified as very high, 99 participants (38.8%) as high, 62 participants (24.3%) as moderate, 31 participants (12.2%) as low, and 3 participants (1.2%) as very low. Based on the mean score, the majority of participants fell into the high category of subjective well-being.

Table 4. Categorization of SWLS Subjective Well-Being Variable

Interval	Category	Frequency	Percentage
$29 \leq x \leq 35$	Very High	60	23.5%
$23 \leq x < 29$	High	99	38.8%
$17 \leq x < 23$	Moderate	62	24.3%
$11 \leq x < 17$	Low	31	12.2%
$6 \leq x < 11$	Very Low	3	1.2%
Total		255	100%

Figure 2. SWLS subjective well-being categorization data distribution

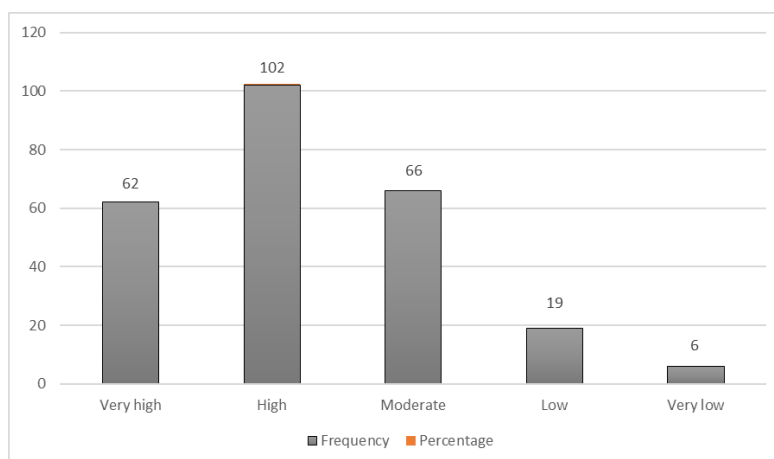


The categorization results presented in Table 5 and Diagram 3 indicate that the healthy lifestyle behavior levels of the 255 participants were distributed across five categories. Specifically, 62 participants (24.3%) were classified as very high, 102 participants (40%) as high, 66 participants (25.9%) as moderate, 19 participants (7.4%) as low, and 6 participants (2.4%) as very low. Based on the mean score, the majority of participants fell into the high category of healthy lifestyle behaviors.

Table 5. Categorization of PANAS Subjective Well-Being Variable

Interval	Category	Frequency	Percentage
$84 \leq x \leq 100$	Very High	62	24.3%
$68 \leq x < 84$	High	102	40%
$52 \leq x < 68$	Moderate	66	25.9%
$36 \leq x < 52$	Low	19	7.4%
$20 \leq x < 36$	Very Low	6	2.4%
Total		255	100%

Figure 3. PANAS subjective well-being categorization data distribution

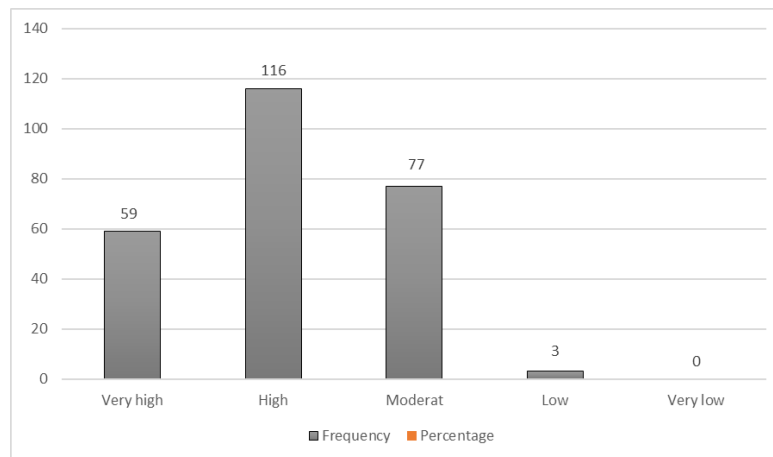


The categorization results presented in Table 6 and Diagram 4 indicate that the healthy lifestyle behavior levels of the 255 participants were distributed across five categories. Specifically, 59 participants (23.1%) were classified as very high, 116 participants (45.5%) as high, 77 participants (30.2%) as moderate, 3 participants (1.2%) as low, and none (0%) as very low. Based on the mean score, the majority of participants fell into the high category of healthy lifestyle behaviors.

Table 6. Categorization of Healthy Lifestyle Behaviors Variable

Interval	Category	Frequency	Percentage
$102 \leq x \leq 120$	Very High	59	23.1%
$84 \leq x < 102$	High	116	45.5%
$66 \leq x < 84$	Moderate	77	30.2%
$48 \leq x < 66$	Low	3	1.2%
$30 \leq x < 48$	Very Low	0	0%
Total		255	100%

Figure 4. Healthy lifestyle behaviors categorization data distribution



Hypothesis Testing

The hypothesis test results presented in Table 7 show that the correlation coefficient (r) for self-regulation is 0.127, with a significance value of 0.021 ($p < 0.05$), indicating a significant positive relationship between self-regulation and healthy lifestyle behaviors among student-athletes. In contrast, the correlation coefficient (r) for subjective well-being is -0.035, with a significance value of 0.292 ($p > 0.05$), indicating a negative but non-significant relationship between subjective well-being and healthy lifestyle behaviors among student-athletes.

Table 7. Correlation Test Results Between Self-Regulation, Subjective Well-Being, and Healthy Lifestyle Behaviors

	1	2	3	4	5
Self-Regulation	1				
Subjective Well-Being	-0.060	1			
SWLS	-0.054	0.550**	1		
PANAS	-0.047	0.939	0.228**	1	
Healthy Lifestyle Behaviors	0.127*	-0.035	-0.115	0.007	1

As shown in Table 8, the simple regression analysis revealed that self-regulation and subjective well-being did not significantly predict healthy lifestyle behaviors. The model yielded an R-value of 0.130, indicating a very weak association, with the two predictors accounting for only 1.7% of the variance in healthy lifestyle behaviors.

Table 8. Simple Regression Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.130a	0.017	0.009	12.908

In Table 9, the F-value is 2.166 with a significance level of 0.117 ($p > 0.05$), indicating that self-regulation and subjective well-being together do not predict healthy lifestyle behaviors among student athletes.

Table 9. Simple Regression Test Results Significance F Value

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	721.713	2	360.856	2.166	0.117 ^a
Residual	41987.558	252	166.617		
Total	42709.271	254			

In Table 10, the coefficient for self-regulation as a predictor of healthy lifestyle behaviors is 2.006, with a significance value of 0.046 ($p < 0.05$), indicating that self-regulation significantly predicts healthy lifestyle behaviors. Meanwhile, the coefficient for subjective well-being is -0.027, with a significance value of 0.666 ($p > 0.05$), indicating that subjective well-being does not predict healthy lifestyle behaviors.

Table 10. Simple Regression Test: Beta Coefficient and t-Value

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	82.181	7.612		10.796	0.000
	Self-Regulation	0.100	0.050	0.126	2.006	0.046
	Subjective Well-Being	-0.021	0.048	-0.027	-0.432	0.666

Discussion

The results demonstrate that self-regulation and subjective well-being together do not predict healthy lifestyle behaviors among student athletes in Indonesia. Similarly, subjective well-being does not independently predict healthy lifestyle behaviors. However, self-regulation is a significant predictor of healthy lifestyle behaviors among student athletes. These findings highlight the role of self-regulation as a predictor in the adoption and maintenance of healthy behaviors, as discussed by experts in health psychology (Hagger et al., 2017; Briguglio et al., 2020). This study illustrates how student-athletes need to regulate themselves to influence and sustain healthy lifestyle behaviors in their daily lives, both as athletes and as students. Subjective well-being often focuses on an individual's perception of their life, whereas healthy lifestyle behaviors are more related to concrete actions, meaning that a person can experience well-being without necessarily engaging in healthy behaviors.

In this context, the influence of self-regulation is observed through the daily activities of student athletes. Self-regulation is crucial for athletes as it enables them to set, pursue, and adjust their goals effectively. Adaptive self-regulation helps individuals manage academic responsibilities and promotes positive adjustment outcomes (Guilmette et al., 2019). Additionally, adopting self-regulation supports the maintenance of healthy behaviors, which in turn protects against physical and mental health issues (Locke et al., 2018). A high level of self-regulation helps individuals maintain their physical and mental health, allowing them to carry out daily activities more effectively.

Athletes with strong self-regulation are more likely to adopt and maintain healthy lifestyle behaviors. This ability enables them to pursue personal health goals effectively, even in the face of challenges or setbacks. Individuals with strong self-regulation often experience improved mental health and overall well-being (Davis, 2015; Sousa et al., 2021). Specifically, self-regulation has been shown to have a direct positive effect on healthy habits and an indirect benefit on mental health and well-being through sustained athletic behavior.

The findings of this study have distinctive implications for athletes. Student-athletes often experience mental fatigue, stress, sleep deprivation, social withdrawal, increased risk of injury, and cognitive overload (Balk & Englert, 2020). Understanding the factors that influence healthy lifestyle behaviors is essential for student-athletes. This study highlights the importance of self-regulation in managing their lives and maintaining their physical health despite facing numerous challenges inherent in their dual role as athletes and students. Furthermore, the findings extend beyond physical health, encompassing cognitive, physical, emotional, and social aspects essential for student-athletes to balance their athletic and academic commitments. Self-regulation is also a relevant factor in predicting physical training practices and other health-related parameters (Faílde-Garrido et al., 2022).

Self-regulation plays a crucial role in shaping healthy lifestyle behaviors among student-athletes. Those who practice self-regulation are more likely to engage in regular physical activity, maintain healthy eating habits, and effectively manage stress. Additionally, self-regulation helps student-athletes balance their academic responsibilities with their sports commitments, further promoting a healthier lifestyle (Cakir et al., 2021).

Based on the presented results, this study offers innovative insights into understanding healthy lifestyle behaviors among student-athletes in Indonesia, a relatively underexplored area. The key novelty lies in the finding that subjective well-being, which is often assumed to be a factor in achieving a healthy life, does not significantly influence healthy lifestyle behaviors. However, this study provides a new perspective by revealing why self-regulation plays a crucial role in shaping healthy lifestyle behaviors among student-athletes.

Despite offering valuable insights into the influence of self-regulation on healthy lifestyle behaviors, this study has several limitations that should be considered when generalizing the results. First, the exact number of respondents is uncertain, and with 255 participants, the sample may not fully represent the entire population of student-athletes in Indonesia. Second, the data collection period, limited to one month, may not be sufficient. Third, the rejection of the major hypothesis—concerning the combined influence of self-regulation and subjective well-being on healthy lifestyle behaviors—suggests uncertainty in the relationships between variables that may not have been fully captured by the study design. Fourth, a significant challenge was finding respondents willing to allocate time to complete the questionnaire due to their busy schedules.

Despite these limitations, the findings of this study contribute significantly to the fields of educational and health psychology by providing critical insights into individual differences in self-regulation that can predict overall health. These findings can inform and support the development of effective health promotion programs and serve as guidelines for designing future maintenance strategies and intervention programs.

Conclusions

Self-regulation and subjective well-being together do not predict the healthy lifestyle behaviors of student athletes in Indonesia. Specifically, self-regulation predicts the extent to which Indonesian student athletes consistently engage in healthy lifestyle behaviors. In contrast, subjective well-being does not predict the healthy lifestyle behaviors of student athletes. Given that subjective well-being consists of life satisfaction, expressed positive affect, and regulated negative affect, it does not appear to serve as a primary predictor for student athletes in implementing healthy lifestyle behaviors.

With the existence of diverse characteristics, it is possible that in addition to self-regulation factors, the diversity of Indonesian culture, economic and financial factors, the ethnography of the region of residence, Indonesian parenting which is still attached to a conservative culture, the learning climate in educational institutions, the friendship environment, and sports facilities can be predictors of healthy lifestyle behavior. Based on this, student athletes need to do self-consistency on an ongoing basis to apply the principles of self-regulation to support their quality as student athletes. In addition, there is a need for programmatic longitudinal studies involving important factors to measure the direct effects of healthy lifestyle behaviors of Indonesian student athletes on the quality and achievement of the student athletes themselves.

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