

Self-assessed health associated with lifestyles in young adults: National survey - Young Lives - Perú

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ABSTRACT

Introduction: Self-perception of health serves as an important marker for both morbidity and mortality, and it is subject to various influences, including cultural, psychological, and social factors. In their daily lives, young individuals are constantly exposed to opportunities for altering their lifestyles either positively or negatively. Therefore, the primary aim of this study is to examine the association between lifestyles and self-assessment of health among Peruvian adults aged 18 to 23 years.

Methods: A cross-sectional analytical study was conducted utilizing a secondary database, specifically the "Young Lives" Round 5 dataset for Peru. Our sample consisted of 595 young adults aged between 18 and 23 years. To assess their lifestyles, we utilized indicators such as physical activity, hours of sleep, alcohol consumption, and tobacco consumption. These lifestyle factors were then associated with the variable of "self-assessed health". Additionally, we analyzed other variables, including the sociodemographic characteristics of the evaluated population.

Results: We found that 24.37% of the sample rated their health as good. Several factors were identified as being associated with a positive self-assessment of health. These factors included being male (odds ratio [OR] = 2.00, 95% confidence interval [CI]: 1.35-2.94), engaging in regular physical activity (OR = 1.50, 95% CI: 1.02-2.23), sleeping for 7 to 8 hours

(OR = 1.69, 95% CI: 1.01-2.81), and occasionally smoking (OR = 2.02, 95% CI: 1.002-4.11).

Conclusions: Engaging in physical activity, getting 7 to 8 hours of sleep, and occasional smoking have been found to be associated with a positive self-assessment of health.

KEYWORDS

Habits, health behavior, physical activity, alcohol consumption, smoking

INTRODUCTION

Health is a "state of physical, mental, and social well-being"¹. Health self-assessment serves as a multifactorial indicator that captures individuals' self-reported data on both physical and psychological well-being². In a systematic review, the prevalence of poor health perception among adolescents has been found to vary widely, ranging from 1.2% to 38%³. Over the course of time, numerous studies have examined the perception of health and the various factors that contribute to it, including psychological, sociocultural, and lifestyle factors, among others^{3,4}. A negative self-evaluation of health has been found to be associated with increased morbidity and mortality rates, as well as lower levels of quality of life, well-being, and overall health^{2,5}. These variable factors, including age range, have been observed to play a significant role in influencing self-assessed health. It has been noted that certain factors that may impact health perception in adolescents might not have the same influence in adult populations. Therefore, understanding the specific factors that affect self-assessed health requires considering the age range and recognizing the differences in their impact across different stages of life, such as adolescence and adulthood⁶.

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Changes in eating habits, the adoption of modern diets, and the rapid pace of urbanization have been linked to an increased prevalence of chronic medical and psychiatric conditions. As a result, promoting a healthy lifestyle has become a significant focus in healthcare. This includes creating a safe and peaceful environment, ensuring optimal sleep, engaging in enjoyable and stress-reducing activities, fostering social connections and support networks, following healthy diets, and engaging in mentally stimulating activities. These factors are increasingly recognized as essential elements for maintaining good health and well-being^{7,8}. Adolescence is a critical period for the development of healthy behaviors and lifestyle choices. Unhealthy habits acquired during this stage can have long-term consequences on health and well-being. Factors such as poor diet, lack of physical activity, substance abuse, and risky sexual behaviors can lead to increased risks of chronic diseases and negative health outcomes in adulthood. Interventions and support systems aimed at promoting healthy behaviors during adolescence are crucial for fostering lifelong well-being². Previous research has indicated that health assessments among adolescents and young people are approximately 2.0 and 1.5 times lower, respectively, compared to adults in younger families⁹.

Several previous studies showed individuals who have higher BMI or perceive themselves as overweight or underweight tend to report lower levels of self-assessed health. These findings highlight the importance of maintaining a healthy weight and body perception in relation to overall health perception¹⁰. In addition, research suggests that the optimal number of hours of sleep for optimal health is typically between 8 and 9 hours. Deviating from this range, either getting less or more sleep, is considered a predictor for adverse self-assessed health. Similarly, behaviors such as tobacco and illicit drug consumption, as well as the absence of physical activity and exercise, are also associated with lower self-assessed health. These findings emphasize the importance of maintaining healthy sleep patterns, avoiding substance abuse, and engaging in regular physical activity for overall well-being and a positive perception of one's own health¹¹⁻¹⁴.

In the study "Health self-perception and its association with physical activity and nutritional status in adolescents," an analysis was conducted using a secondary database focused on adolescents. The findings revealed a significant association between negative self-perception and insufficient physical activity (odds ratio [OR] = 1.27, 95% confidence interval [CI]: 1.04-1.56). Additionally, an association was identified between excess weight and negative self-perception, although the association was not statistically significant (OR = 0.94, 95% CI: 0.72-1.22). These results suggest that insufficient physical activity is linked to negative self-perception among adolescents, while the relation-

ship between excess weight and self-perception requires further investigation due to the lack of statistical significance¹⁵. Similar findings were observed in studies involving adult populations, where obesity was found to be associated with poorer self-assessment compared to individuals with normal weight. Additionally, maintaining a moderate level of physical activity was associated with a more positive self-assessment of health. These results suggest that weight status and physical activity levels continue to play a significant role in shaping self-perception of health across different age groups, emphasizing the importance of weight management and regular physical activity for maintaining a positive perception of overall health¹⁶.

In the city of Lima, Peru, a significant proportion of university students, specifically 53.9%, exhibit attitudes that do not incorporate healthy lifestyles into their daily routines. This lack of emphasis on healthy behaviors among students has the potential to impact their mental health. It highlights the need for interventions and education programs that promote the adoption of healthy lifestyles among university students in order to enhance their overall well-being and mental health outcomes¹⁷. It is concerning to note that a significant percentage of students from Lima and Callao, specifically up to 78.1%, do not engage in an adequate amount of physical activity. This high prevalence of insufficient physical activity among students in these areas is worrisome as it can have detrimental effects on their overall health and well-being¹⁸. Given the lack of information on unhealthy lifestyles in regions outside of Lima, it becomes crucial to propose research that covers the entire population of Peru. By conducting a comprehensive study across different regions of Peru, valuable insights can be gained regarding the association between various lifestyle factors and the self-assessment of health in this specific age group. Such research will contribute to a better understanding of the health dynamics and needs of young adults in the country. In light of this, the following research question is proposed: Is there a relationship between lifestyles and self-evaluation of health among adults aged 18 to 23 years in Peru?

The database "Young lives 2016" is the latest update that includes variables on lifestyles and self-perception in health with greater statistical confidence due to the type of sampling conducted, so it is important to analyze these variables to implement improvement proposals in the healthcare of young adults in our country as well as new research proposals.

METHODOLOGY

We conducted a cross-sectional analytical study using data from the Round 5 of the Young Lives survey in Peru, conducted between 2016 and 2017¹⁹. The Young Lives survey is a longitudinal study that has been following children from four developing countries (Vietnam, Ethiopia, India, and Peru) for a period of 15 years. The first round of data collection took

place in 2002. In the Peru-specific round, a probabilistic sampling approach was employed, selecting 20 “sentinel communities” that were representative of districts with high poverty levels in the country. These communities were chosen to ensure that the study captured the experiences of individuals living in economically disadvantaged areas of Peru²⁰.

The database included 592 adolescents aged 18 to 23 years. We organized the variables into three main sections for analysis:

- *Section 1:* Includes sociodemographic data such as the variables of age, gender, marital status (single, with a partner), educational level (primary or lower, secondary and higher), BMI (underweight, normal, overweight, obesity), and place of residence (coast, mountains, and jungle).
- *Lifestyles:* Questions related to consumption of alcoholic beverages (never, sometimes: once a month, frequently: once a week and everyday), tobacco use (never, sometimes: once a month, frequently: once a week and everyday), sleep duration (6 hours or less, 7 - 8 hours, from 9 hours to more), physical activity (yes and no).
- *Self-perception in health:* Two questions on perception of health were used; one of them referred to the self-perception of their health “In general, would you say your health is very poor, poor, average, good or very good?” and the other on the perception of their health compared to other people of the same age “Compared with other boys/girls of your same age would you say your health is?” normal or worse health and better health self-assessment. (Figure 1).

Statistical Analysis

We extracted the data from the “Young Lives” Peru - Round 5 study database and imported it into the Stata Statistical Software (Release 15), StataCorp LLC. We conducted a descriptive analysis to understand the characteristics of the variables in the dataset. Following the descriptive analysis, we performed a bivariate analysis to explore relationships between variables. For numerical variables, we used the Mann-Whitney U test to compare two independent groups, while for categorical variables, we employed the chi-square statistical test. Furthermore, we conducted logistic regression analysis to investigate associations between variables. The odds ratio (OR) was utilized as a measure of association, indicating the likelihood of an outcome occurring based on the exposure to specific variables. Multivariate logistic regression models were constructed, adjusting for two sets of variables.

By employing these statistical techniques, we aimed to uncover insights into the relationships between variables and identify potential predictors of health self-assessment in the study population.

Ethical considerations

Our study was conducted using an open secondary database, where the observations were anonymized and coded. We did not have access to any personal information or identifiable data of the study participants. Therefore, there was no possibility of recognizing or identifying individual participants based on the available data. Confidentiality and privacy were strictly maintained throughout the study, ensuring the

		"Compared with other boys/girls of your same age would you say your health is?"	
		Much better Better Same	Worst Much Worst
"In general, would you say health is very poor, poor, average, good or very good?"	Very good Good	Better health Self-assessment	Normal or worst health self - assessment
	Average Poor Very Poor	Normal or worst health self - assessment	Normal or worst health self - assessment

Figure 1. Outcome Health self – assessment according to 2 questions about Self-perception

protection of participants' personal information, and complying with ethical guidelines for data usage. The research plan was reviewed by the Institutional Ethics Committee of Continental University and approved through Official Letter No. 004-2022-VI-UC.

RESULTS

Table 1 presents the descriptive analysis of the study variables. The dataset included 595 observations, and the median age of the participants was 21 years. The majority of the participants were male, had secondary or lower education, were single, and resided on the coast. Regarding health self-evaluation, 24.33% of the population reported a better self-assessment of their health. In terms of lifestyle factors, 18.99% of the participants reported sleeping less than 6 hours, while 57.65% reported sleeping for 7 to 8 hours. In relation to physical activity, 59.66% of the population engaged in some form of physical activity. Regarding smoking habits, 43.01% reported smoking sometimes, and 10.97% reported smoking frequently. As for alcohol consumption, 18.34% of the participants reported frequent consumption.

Table 2. The bivariate analysis reveals significant associations between health self-evaluation and various factors. Gender ($p < 0.001$), educational attainment ($p = 0.007$), marital status ($p < 0.001$), sleep duration ($p = 0.017$), physical activity ($p = 0.041$), and tobacco use ($p = 0.017$) demonstrate significant associations with health self-evaluation.

Table 3. The logistic regression analysis, both crude and adjusted, reveals associations with odds ratios (OR). Being male (OR = 2.0, 95% CI: 1.35-2.94), having a single marital status (OR = 2.35, 95% CI: 1.46-3.78), sleeping 6 hours or less (OR = 2.36, 95% CI: 1.3-4.28), sleeping between 7 or 8 hours (OR = 1.69, 95% CI: 1.01-2.81), engaging in physical activity (OR = 1.50, 95% CI: 1.02-2.23), and smoking sometimes (OR = 2.03, 95% CI: 1.002-4.11) are associated with a better self-evaluation of health. On the other hand, pursuing a primary school education (OR = 0.37, 95% CI: 0.19-0.72), high school education (OR = 0.56, 95% CI: 0.35-0.89), and having obesity (OR = 0.4, 95% CI: 0.18-0.90) are significantly associated with a normal or worse health self-evaluation.

DISCUSSION

The current study was conducted on a population of young individuals aged 18 to 23 years across Peru. Our findings indicated that male students exhibited a higher level of self-evaluation in health. Interestingly, these results align with a study conducted in Brazil, which also reported that men tend to have a positive perception of their health, rating it as "good" or "very good"²¹. Furthermore, other studies have found an inverse relationship between the female sex and a positive self-evaluation in health. On average, females tend to

Table 1. Sociodemographic characteristics and lifestyles

		N = 595
Gender	Male	310 (52.10%)
	Female	285 (47.9%)
Instruction	Basic or Less	96 (16.13%)
	High School	394 (66.22%)
	University	105 (17.65%)
Marital status	Single	422 (70.92%)
	With couple	173(29.08%)
Age	21 (21-22)	
Place of Residence	Coast	385 (64.81%)
	Mountain	154 (25.93%)
	Jungle	55 (9.26%)
BMI	Underweight	11 (1.85%)
	Normal	361 (60.77%)
	Overweight	164 (27.61%)
	Obesity	58 (9.76%)
Self-assessment in health	Normal o worst	450 (75.63%)
	Better	145 (24.37%)
Sleep hours	6 or less	113 (18.99%)
	7-Ago	343 (57.65%)
	Nine or more	139 (23.36%)
Physical activity	No	240 (40.34%)
	Yes	355 (59.66%)
Smoke	Never	260 (46.02%)
	Sometimes	243 (43.01%)
	Routine	62 (10.97%)
Alcohol consumption	Never	121 (21.34%)
	Sometimes	342 (60.32%)
	Routine	104 (18.34%)

Median (RIC), N (%).

Table 2. Association between sociodemographic variables and lifestyles to self-evaluation in health

Self-evaluation in health				
		Normal or worst	Better	p
Gender	Male	216 (69.68%)	94 (30.32%)	< 0.001
	Female	234 (82.11%)	51 (17.89%)	
Instruction	Basic or less	80 (83.33%)	16 (16.67%)	0.01
	High school	302 (76.65%)	92 (23.35 %)	
	University	68 (64.76%)	37 (35.24%)	
Marital status	Single	302 (71.56%)	120 (28.44%)	<0.001
	With couple	148 (85.55%)	25 (14.45%)	
Age	21(21-22)		0.23	
Place of residence	Coast	288 (74.81%)	97 (25.19%)	0.74
	Mountain	120 (77.92%)	34 (22.08%)	
	Jungle	41 (74.55%)	14 (25.45%)	
BMI	Underweight	8 (72.73%)	3 (27.27%)	0.16
	Normal	274 (75.9%)	87 (24.1%)	
	Overweight	117 (71.34%)	47 (28.66)	
	Obesity	50 (86.21%)	8 (13.79%)	
Sleep hours	6 or less	77 (68.14%)	36 (31.86%)	0.02
	7 u 8	257 (74.93%)	86 (25.07%)	
	9 or more	116 (83.45%)	23 (16.55%)	
Physical activity	No	192 (80%)	48 (20%)	0.04
	Yes	258 (72.68%)	97 (27.32%)	
Smoke	Never	206 (79.23%)	54 (20.77%)	0.02
	Sometimes	169 (69.55%)	74 (30.45%)	
	Frequently	51 (82.26%)	11 (17.74%)	
Alcohol consumption	Never	93 (76.86%)	28 (23.14%)	0.89
	Sometimes	259 (75.73%)	83 (24.27%)	
	Frequently	77 (74.04%)	27 (25.96%)	

n(%), significant p value <0,05.

Table 3. Logistic regression of the sociodemographic variables and lifestyles to the self – assessment in health

		Self – assessment in health					
		Better health self assessment		Adjusted model 1		Adjusted model 2	
		OR crude	IC	OR adjusted	IC	OR adjusted	IC
Gender	Male	2.0	(1.35- 2.94)	1.83	(1.21-2.77)		
	Female	Reference		Reference			
Instruction	Basic or less	0.37	(0.19 – 0.72)	0.45	(0.22-0.91)		
	High school	0.56	(0.35 – 0.89)	0.56	(0.35-0.90)		
	University	Reference		Reference			
Marital status	Single	2.35	(1.46- 3.78)	1.78	(1.07-2.98)		
	With couple	Reference		Reference			
BMI	Underweight	0.93	(0.24- 3.67)	0.96	(0.23-3.94)		
	Normal	0.79	(0.52-1.20)	0.76	(0.5-1.17)		
	Overweight	Reference		Reference			
	Obesity	0.4	(0.18 – 0.90)	0.49	(0.21-1.13)		
Sleep hours	6 or less	2.36	(1.3 – 4.28)			2.39	(1.28-4.45)
	7 u 8	1.69	(1.01 – 2.81)			1.60	(0.94-2.74)
	9 or more	Reference				Reference	
Physical activity	No	Reference				Reference	
	Yes	1.50	(1.02 – 2.23)			1.47	(0.98-2.23)
Smoke	Never	1.22	(0.59 – 2.49)			1.22	(0.58-2.54)
	Sometimes	2.03	(1.02- 4.11)			1.86	(0.92-3.82)
	Frecuently	Reference				Reference	
Alcohol consumption	Never	Reference					
	Sometimes	1.06	(0.65 – 1.74)				
	Frecuently	1.16	(0.63 – 2.14)				

OR: Odds Ratio.

*Model 1: Adjusted for gender, instruction, marital status e BMI.

**Model 2: Adjusted for sleep hours, physical activity and smoke.

report lower levels of self-assessed health, ranging from poor to very bad^{22,23}.

In our study, we found that participants with a primary or lower and secondary education level had a "Better self-evaluation in health". However, it is worth noting that a study conducted in Lithuania observed a relationship between a positive

self-evaluation in health and participants with a secondary education level or university level. This suggests that the association between educational attainment and self-assessed health may vary across different populations and contexts²³.

Our study findings indicated that individuals who were single had a "Better self-evaluation in health" compared to other

relationship statuses. These results align with studies conducted in Malaysia, which reported that widowed and divorced individuals had a "poor health self-assessment." The consistency between our study and the Malaysian study suggests that relationship status may influence how individuals perceive their own health. However, it is essential to consider that cultural and contextual factors can influence these associations and may vary across different populations²⁴. Another study found that both single and married individuals reported better health compared to those who lived apart from their partners. This suggests that having a stable relationship, regardless of marital status, may have a positive impact on health self-assessment. Our study's findings align with this, as we observed that being single was associated with a "Better self-evaluation in health."²⁵.

Another study found that both single and married individuals reported better health compared to those who lived apart from their partners. This suggests that having a stable relationship, regardless of marital status, may have a positive impact on health self-assessment. Our study's findings align with this, as we observed that being single was associated with a "Better self-evaluation in health"²⁶.

Our findings indicate that engaging in physical activity is associated with a better self-evaluation in health. This relationship demonstrates a direct proportionality and aligns with a study conducted in 2019, which also found that physical activity was associated with a negative self-evaluation in health. The positive relationship between physical activity and self-evaluation in health may be attributed to various factors, such as improved physical fitness, increased self-confidence, and enhanced psychological well-being^{15,27}.

In our study, we also found that occasional smoking was associated with a better self-perception of health. Interestingly, a study conducted in Brazil reported contrasting results, where both current and past smoking habits were statistically associated with a negative self-perception of health. This difference in findings may be attributed to several factors, including variations in the study population, cultural differences, and the implementation of public policies against smoking in different countries. The Brazilian study suggested that increased awareness of healthy behaviors and the enforcement of anti-smoking policies may contribute to a more negative self-perception among smokers. It is important to consider these contextual factors when interpreting the relationship between smoking habits and self-perceived health²⁸.

Our findings regarding BMI indicate that individuals with obesity are at a higher risk of having a poor self-evaluation of health. These results are consistent with previous studies that have identified obesity as a risk factor for a worse self-perceived health, both in young adults and children. The association between obesity and self-evaluated health is well-documented and can be attributed to various factors. Obesity is

known to be associated with an increased risk of various chronic health conditions, such as cardiovascular diseases, diabetes, and musculoskeletal disorders, which can impact individuals' perception of their own health. Additionally, the psychosocial effects of obesity, such as body image dissatisfaction and stigma, may also contribute to a negative self-perception of health^{24,25,29}.

Regarding the variable Alcohol consumption, no significant association was established with self-evaluation in health, however, in other countries such as Malaysia, an association was found between moderate and severe alcohol consumption with a worse health evaluation¹⁹, this should be to a negative perceived social stigma, which would be influenced in mental health and therefore in perceived health³⁰; in other study alcohol consumption showed an inverse relationship with poor health perception³¹, so there is not a single consistent conclusion between alcohol consumption and health self-evaluation, as it varies according to the different studies³², probably due to the culture and lifestyles of each of the countries and regions. However, it is important to emphasize that alcohol consumption contributes to increased morbidity³³.

Limitations of this study includes possible challenges related to data quality, limited control over the data collection process, constraints in terms of available variables and measures, contextual variations that may impact the study outcomes, restricted researcher involvement, and limited control over the variables being studied, which can potentially impact the analysis results.

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