

## **Healthy habits in primary school students in Peru: literal descriptive review**

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descriptive***

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### **Resumen**

Algunos informes de EsSalud (2020) indicaron que ciertos hábitos ligados a la salud impactaron negativamente en los niños de 6 a 12 años de edad durante el periodo del covid-19. Por eso, esta investigación tuvo como objetivo indagar sobre el estado de la cuestión y la promoción de hábitos saludables en los colegios de educación primaria en el Perú. Al no encontrarse antecedentes, esta indagación se centró en artículos publicados entre los años 2018 y 2022 sobre los hábitos saludables en los escolares de 6 a 12 años del nivel primario en el Perú. En cuanto a la metodología, la investigación fue descriptiva, con enfoque cualitativo. En concreto, se hizo una revisión bibliográfica en sitios web y bases de datos como Sciece, Scielo, Scopus del Perú y Renati, para lo cual se usaron ecuaciones de búsqueda con palabras claves y operadores lógicos. En cuanto a los resultados, se seleccionaron 54 artículos: 8 de actividad física, 32 de alimentación saludable, 10 de hábitos de higiene saludable y 4 sobre la calidad del sueño. Finalmente, la investigación descubrió que los escolares presentan deficiencias en sus hábitos alimenticios, higiénicos, de esparcimiento y físicos debido a múltiples factores, como falsas creencias, malas prácticas, carencia de servicios básicos, agua potable, artículos de aseo personal, dentífricos, jabones y abuso de alimentos procesados. Los datos recogen propuestas válidas para mejorar los hábitos saludables de los escolares, los cuales van desde promover el ejercicio físico y ofrecer dietas saludables hasta monitorear la regulación de productos y propagandas alimenticias.

**Palabra clave:** obesidad infantil, dieta saludable, ejercicio físico, cuidado personal, higiene infantil.

## Abstract

Some reports from EsSalud (2020) indicated that certain habits linked to health had a negative impact on children between the ages of 6 and 12 during the covid-19 period. As such, this research aimed to investigate the state of the art and the promotion of healthy habits in primary schools in Peru. Not finding precedents, this inquiry focused on articles published between 2018 and 2022, on healthy habits in schoolchildren from 6 to 12 years of age at the primary level in Peru. Regarding the methodology; the research was descriptive with a qualitative approach; A bibliographic review was made on websites and databases such as; Sciencie, Scielo, Scopus del Perú and Renati, using search equations; with keywords and logical operators. Regarding the results, 54 articles were selected; 8 on physical activity, 32 on healthy eating, 10 on healthy hygiene habits and 4 on sleep quality. Finally, the investigation discovered that schoolchildren present deficiencies in their eating, hygienic, recreational and physical habits, this due to multiple factors such as; false beliefs, bad practices, lack of basic services; drinking water, personal hygiene items; toothpastes, soaps, and abuse of processed foods. The results collect valid proposals to improve the healthy habits of schoolchildren, and range from promoting physical exercise, offering healthy diets to monitoring the regulation of food products and advertisements.

**Keywords:** childhood obesity, healthy diet, physical exercise, personal care, child hygiene

## Resumo

Alguns relatórios de EsSalud (2020) indicaram que certos hábitos ligados à saúde tiveram um impacto negativo em crianças entre 6 e 12 anos durante o período de covid-19. Assim, esta pesquisa teve como objetivo investigar o estado da arte e a promoção de hábitos saudáveis nas escolas primárias do Peru. Como não foram encontrados precedentes, esta pesquisa se concentrou em artigos publicados entre 2018 e 2022, sobre hábitos saudáveis em escolares de 6 a 12 anos de idade no nível primário no Peru. Em relação à metodologia; a pesquisa foi descritiva com abordagem qualitativa; Foi feita uma revisão bibliográfica em sites e bases de dados como; Sciencie, Scielo, Scopus del Perú e Renati, usando equações de busca; com palavras-chave e operadores lógicos. Quanto aos resultados, foram selecionados 54 artigos; 8 em atividade física, 32 em alimentação saudável, 10 em

hábitos saudáveis de higiene e 4 em qualidade do sono. Por fim, a investigação descobriu que os escolares apresentam deficiências em seus hábitos alimentares, higiênicos, recreativos e físicos, devido a múltiplos fatores como; falsas crenças, más práticas, falta de serviços básicos; água potável, artigos de higiene pessoal; cremes dentais, sabonetes e abuso de alimentos processados. Os resultados coletam propostas válidas para melhorar os hábitos saudáveis dos escolares, e vão desde a promoção de exercícios físicos, oferta de alimentação saudável até o monitoramento da regulamentação de produtos alimentícios e propagandas.

**Palavras-chave:** obesidade infantil, alimentação saudável, exercício físico, cuidados pessoais, higiene infantil.

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## Introduction

Developing healthy habits in childhood has been a challenge that has not been successfully faced in citizen education, which has brought problems to the public health of the population. In this regard, the World Health Organization (WHO) has indicated that to maintain good health in the region it is valuable to develop good eating habits from childhood that include fruits, vegetables and foods with less than 10% sugar and 30% fats, as well as exceeding 5 grams of salt in food intake.

In this sense, the WHO (2018) warns that in the last 40 years obesity has tripled in Latin America and estimates that currently 41 million children under five years of age are overweight. In the case of schoolchildren and adolescents, the figure is close to 350 million, which is intensified due to the consumption of fast foods. Given this scenario, health specialists recommend following a balanced and varied diet, which contains the necessary nutrients, depending on the age, sex, physical condition and state of health of the person. For this reason, it is important to investigate and propose contributions to encourage more guidance programs on “healthy eating” in schools through materials, workshops and sessions where parents also participate (López *et al.* , 2020).

## Context

In Peru, there are multiple factors that intervene in the development of eating habits. The acquisition, formation and maintenance of these has been a consequence of learning and the media environment, which begins in childhood and extends throughout life. It is, therefore, a complex problem that varies depending on where you live and the food available (United Nations Organization [UN], 2018).

In this sense, some research has indicated that there are deficiencies in the training aspects of teachers to meticulously guide students (Guadalupe *et al.* , 2017). This is a reality that highlights the importance of training the educational community on this topic. To do this, some proposals that have been relatively successful in other countries could be taken as examples, such as the so-called “nutritional traffic light” ( Velasteguí , 2016).

However, and despite the emergency of the matter, in the Peruvian context only separate investigations have been presented on this topic, some from the field of public health (Suca and Valle, 2013), others from the legal aspects - such as the analysis around Law no. 30021, Law for the Promotion of Healthy Eating for Boys, Girls and Adolescents (Rojas and Goytizolo , 2016)—and a few from the educational area linked to nutritional status (Bazán and Camposano, 2017). Therefore, the need to periodically review the state of the art offered by the contributions on the healthy habits of Peruvian schoolchildren is evident.

In this country, the Food and Agriculture Organization of the United Nations (FAO) has indicated that more than 50% of the population is overweight, while the Pan American Health Organization (PAHO) indicates that the rate of childhood obesity has increased in America. Likewise, the Ministry of Health of Peru (MINSA) indicates that out of every ten children, three are overweight ( National Institute of Health [INS], 2019). Unfortunately, these figures are corroborated by research in the environment, where students say they have changed the traditional breakfast for sodas and biscuits (Torres *et al.* , 2016). A report prepared by the Regional Center Program (2019) mentions that the province of Huancayo - the fifth most important city in Peru - has serious public health problems, which is evidenced by malnutrition, anemia, chronic childhood malnutrition and bad eating habits.

### **Justification**

Given this problem and the lack of proposals that bring together the isolated contributions of research on healthy habits, the present bibliographic review answers the following question: what research exists on healthy habits at the primary level in Peru and what have been its contributions? To do this, a list of the latest research on the topic is prepared and various proposals presented in the last four years on healthy habits in primary school students in Peru are described.

The objective of this bibliographic review has arisen from the need to examine and summarize the knowledge of the academic works carried out preliminarily between the years 2018 and 2022 on the eating habits of boys and girls in school (that is, between 6 and 12 years old of age) in Peru. The bibliographic review of research and scientific

articles addressed various disciplines: health sciences, psychology, education, *marketing* and economics to identify, evaluate and compare results that contribute to the solution of the problems that confront the eating habits of students in stage. school. The review of scientific literature is not a casual process, but rather a thorough and sustained task that allows new knowledge to be provided.

## Background

To address the development of healthy habits in boys and girls at the primary level we have to turn to the theorists who developed this concept, which was later associated with the educational space. Thus we have Maslow (1954), who classified five categories of human needs: physiological, security, love, esteem and self-actualization. This author pointed out that physiological needs are the lowest level on the scale, but they are also the most important, since without food there can be no existence. The probability that man is more motivated by his physiological needs is very high, since this is the only way to guarantee his survival.

On the other hand, Vygotsky (1978), in his sociocultural theory, stated that there is an interaction between human beings and food. This is a cultural factor that is inside and outside of school, so there is a correlation between the person and the diet that is embedded in each cultural environment.

For his part, Ausubel (1976), in his theory on meaningful learning, explained that learning depends on cognitive structures, and this only happens when the student relates new information with old information, which gives rise to new knowledge. This is a clear example of how new concepts are acquired and how new healthy habits can be acquired.

Likewise, Elliot (1993) defined “healthy lifestyle” as behavior that involves a risk to protect health. In this sense, it should be understood as a pattern of relatively stable healthy behaviors. In this way, it can be noted that a healthy lifestyle offers four characteristics: a) it has a behavioral and observable nature, b) it manifests moderately fixed behaviors, c) it consistently denotes behavioral combinations, d) it does not imply a common etiology, but there are some common causes. In other words, the concept of *healthy habits* can be understood as collective models of behavior consistent with health, based on responsible measures according to their possibilities in life.

To summarize, this research took into account Maslow's contribution on the basic physiological needs of the human being, Vygotsky's contribution on the interaction of the human being and food as a cultural factor in school, Ausubel's contribution to relate the new information about what healthy, with knowledge already consolidated, resulting in a new way of thinking about healthy habits; In addition, Elliot's “healthy lifestyle” theory



was considered, because if we do not transform our habits into healthy ones, we will not be able to advance culturally, socially, or cognitively as human beings.

## Materials and methods

The present research was a literal bibliographic review, which focuses on the scrutiny of specialized material on a topic. This seeks to disseminate the most relevant data, in this case on healthy habits of boys and girls in school. This descriptive review will offer the reader an update of useful concepts about the healthy habits of Peruvian children in school.

The research approach was qualitative and descriptive, as it gathered substantial information on the topic addressed. The bibliographic review of the scientific literature was carried out under the criteria and systematic approaches of *All types of review should be systematic*, “For a successful review of the academic literature” (Booth *et al.*, 2016).

## Procedure for identification of studies

A bibliographic review was carried out in databases from the Web of Science, Scopus, Scielo, Renati, virtual libraries, scientific journals and repositories taking into account articles that had the words “healthy habits” or “healthy lifestyle” in some field. From these, a search was carried out to match the titles, summaries and keywords of the different investigations.

Searches for bibliographic references were conducted by the author and filed alphabetically in separate work folders. The Boolean operators “and” and “or” were used. The scientific articles were selected so that they all met the criteria established in the search: no older than 4 years (2018-2022). Other sources were consulted to complete the methodological processes of the research. The information was reviewed and the elements necessary for the development of the study were summarized. Therefore, a bibliographic review study on healthy habits (HS) in schoolchildren between 8 and 12 years of age in Peru is presented.

## Eligibility criteria

### Inclusion criteria

Articles in multiple disciplines were considered. The articles and/or research included experimental, quasi-experimental, descriptive, cross-sectional, correlational, bibliographic studies and feasibility studies for educational projects. The selection of these was based on four criteria: 1) articles that included the word “healthy habits” or “healthy lifestyle”; The sample was in an age range of between 6 and 12 years of age at

the school level; 2) articles whose study subjects belonged to Peru, 3) articles whose context belonged to IE of Peru; 4) articles published between 2018 and October 2022. In the search, the articles had to have the words *healthy habits* or *healthy lifestyle* in their titles, summaries or keywords. What was collected was processed by an analysis matrix. Once the matrix of articles was completed, the research topics were classified and then an analysis of the contribution to the article was carried out.

### **Exclusion criteria**

Scientific articles written in disciplines other than those selected or that were not linked to the proposed searches were not considered. Nor were texts included without an abstract *or* research that did not have academic rigor. Likewise, articles with low analysis of the established theme or treated as a subvariable were excluded ; In addition, articles published outside the established time were excluded.

### **Validity**

This bibliographic research is limited to the identification, selection, inclusion and exclusion criteria indicated. Its relevance and usefulness is presented within the Peruvian school environment, with boys and girls between 8 and 12 years of age, published between 2018 and 2022. This consists of its internal validity, since it responds to a proven methodology. This work will be useful to delve into further research, since it presents the state of the art of healthy habits of children in school, which constitutes an original investigation, since no other similar ones were found. This is where its external validity lies.

## **Results**

The search yielded 296 articles with the terms “healthy habits” or “healthy quality of life” in their titles, summaries or keywords. Through the selection technique, 242 were discarded, of which 110 worked with individuals of other ages, 83 belonged to other countries, and 41 to other years of publication. 8 duplicate texts were also excluded.

In short, 54 articles were selected, classified as follows: 8 dealt with the topic of physical activity, 32 healthy eating, 10 healthy hygiene habits and 4 quality of sleep. These articles were organized according to their characteristics and processed through an analysis matrix, that is, a synoptic table that allowed us to observe the relationship between the various themes.

Three ranges were considered in the matrix: 1) authors of the study and date; 2) research topics and 3) main contributions of results related to healthy habits (HS). Once the matrix was completed with the 54 articles, both the research topics and the proposals or theoretical contributions were classified. The classification of the topics was developed in order of frequency in the Excel office tool. For this purpose, the categorized themes were grouped according to their content; For example, articles that mentioned the topic of “hygiene”—such as that of Zapata Domínguez (2019) —were characterized in “Hygiene.” Therefore, any directly related topic was included within the corresponding category. In total, four categories were found: 1) healthy eating, 2) healthy hygiene, 3) physical activity, and 4) quality of sleep.

**Table 1 .** Related studies on healthy habits in Peru.

Date	Authorship	Research topic	Population
2018	Barrón, D. and Leiva, E.	Management of healthy habits and improvement of learning in boys and girls.	Huancayo, Sicaya
2018	Colan <i>et al</i> .	Funtilunch . Delivery of healthy snacks for school-age children.	North Lima
2018	Diaz, L.	Management of learning about hygiene habits .	Junin, Jauja
2018	Diaz, T.	Academic performance and biosocioenvironmental factors .	Cajamarca Jaen
2018	Figueroa, A.	Personal hygiene and grooming habits and their consequences in health care.	Puno, Huata
2018	Infantes, W.	Guidance of physical abilities for the good performance of activities.	Trujillo
2018	Llanos, G.	Eating habits and nutritional status in sixth grade students .	Chiclayo, Monsefu
2018	Palomino, C.	Handwashing practice in 4th and 5th grade primary school students.	Lima Center
2018	Quispe, C. and Gutierrez . L.	Food consumption and anemia in female adolescents from a school .	South Lima
2018	Sánchez, C.	Teaching physical education with an interdisciplinary approach .	East Lima
2018	Sayán, J.	Eating habits and academic performance .	North Lima
2018	Tarqui, C. and Álvarez, D	Healthy lunch boxes in primary school students.	Peru
2018	Torres, J.	Healthy eating and lifestyle strategies.	Huanta, Ayacucho
2019	Busse <i>et al</i> .	Food marketing aimed at children .	Peru



2019	Calvo, J.	Use of an <i>app</i> to promote healthy habits in preschoolers.	North Lima
2019	Caycho, C.	Fruit and vegetable consumption habits and nutritional status of schoolchildren .	North Lima
2019	Florian, E.	Effects of the Healthy Habits Training Program .	Trujillo, Porvenir
2019	Huayta, D.	Learning achievements in the area of physical education .	South Lima
2019	Zapata Domínguez, J.	Personal hygiene in children in first grade primary education.	Tumbes
2019	Lozano <i>et al</i> .	Ultra-processed foods and anthropometric parameters in schoolchildren.	East Lima
2019	Ordas , J.	Healthy physical exercise for children .	Peru
2019	Straw, K.	School environmental management in students' cleaning habits .	chinch
2019	Magician, C.	Market study for a healthy snack business in schools.	Chiclayo
2019	Reyes <i>et al</i> .	Anemia and child malnutrition in rural areas .	Barranca, Lima
2019	Salas, W.	Teaching strategies for personal hygiene and the area of social personnel in children .	Ucayali, Pucallpa
2019	Torres, F. and Ciriaco M.	The childhood obesity epidemic in Peru .	Peru
2019	Valdez, L.	Dietary risks and ultra-processed foods .	Peru
2019	Villanueva, S.	Fruit and vegetable consumption in 6th grade primary school students.	North Lima
2020	Alcoceba , I.	Impact of educational intervention on healthy habits .	South Lima
2020	Arévalo, Y.	Healthy eating program to strengthen academic performance .	Chiclayo
2020	Fernandez, E.	Food Advertising, Childhood Obesity, and Corporate Social Responsibility .	Peru
2020	Larico , M.	Healthy lunch boxes in preschools .	Lima
2020	Morales, Y.	Healthy kiosks against overweight and obesity in children from 6 to 11 years old .	West Lima
2020	Paredes, M. and Salazar, K.	Eating habits of rural primary school students.	Barranca, Lima
2020	Pumacallahui , A.	Use of electronic screens and sleep problems in schoolchildren.	Arequipa

2020	Medical Writing	Childhood obesity and advertising in Peru .	Peru
2020	Roncal, A.	Review of body composition, overweight and obesity in schoolchildren.	Trujillo
2020	Rojas, E.	Hygiene habits in second grade primary school students .	Huanuco
2020	Vargas, E. and Mallma , E.	Healthy habits and environmental awareness in 5th and 6th grade	East Lima
2020	Yarleque, E.	Hygiene habits in boys and girls in the first grade of primary school .	Piura, More
2020	Yovera <i>et al</i> .	Learning healthy habits in primary education .	North Lima
2020	Zúñiga, P. and Chávez, Y.	Sleep quality and food consumption in first grade children.	East Lima
2021	Canto, H. and Zora , L.	Bicycle workshops in physical education .	Huanuco
2021	Castañeda, D.	Eating habits of schoolchildren according to rating scales .	Lima, Surco
2021	Guillen, E.	Physical inactivity and its relationship with poor sleep quality.	Arequipa
2021	Mio, K. and Chacón, A.	Effect of the nutritional program “ Wawathani ” healthy snacks.	Lima, East
2021	Paico, P.	Sociocultural factors of obesity prevention in children aged 5 to 9 years .	East Lima
2021	Panti, A.	Quality level of the Qaliwarma program , in IE at the primary level.	Mother of God
2021	Ricapa , G. and Villanueva, A.	Eating habits of students from 6 to 12 years old .	Huancayo, Chupaca
2021	Sauñe , M.	Symbolic play and personal hygiene in early education boys and girls .	Nazca, Ica
2021	Sernaque , D.	Consumption of ultra-processed products and sleep quality.	Callao, Lima
2021	Zumaeta, M.	Nutritional status and eating habits in primary schoolchildren .	Lima
2022	Yáñez, M. and Villar, C.	Level of physical activity in children from two schools in Cercado de Lima.	Lima Fence
2022	Sangay, J. and Campos, K.	Nutrition and physical exercise of 5th grade primary school students.	Lima, Huaura

Source: self made

Habits make up the customs, attitudes and forms of behavior that are assumed in specific situations of daily life, which form and consolidate patterns, behaviors and learning that transcend (favorably or unfavorably) the state of health, nutrition and well-being (Aspe and López, 1999). Taking this idea into account, the contributions were grouped according to their category and the frequency with which they were repeated in the articles. In the *healthy eating category*, 32 contributions were found; In the *healthy hygiene habits category*, 10 were found; In the *physical activity category*, 8 were found, and in the *sleep quality category*, 4 were found.

## **Healthy nutrition**

### **Habits and social origin**

According to the WHO, an individual's nutritional needs are met with a healthy diet at different stages of life (childhood, adolescence, adulthood and aging). The consensus of the research discussed indicates that schoolchildren should consume healthy foods to improve their academic performance (Sayán, 2018); Even some regional contributions point out that consuming meals on time and in company usually has better benefits (Ricapa and Villanueva, 2021). Likewise, there is a relationship between nutritional status and school origin, especially in certain populations where there is not much access to nutritious products, although an association is not observed between eating habits and the school's origin (Llanos, 2018).

This means that bad eating habits do not depend on social origin, that is, a student from a high social stratum can have the same bad eating habits as one from a low social stratum. For this reason, there is a need in the pedagogical field to promote new and better habits to combat obesity and school malnutrition.

### **Habits and nutritional status**

Several researchers have developed multiple proposals, with interdisciplinary analysis, which have shown that strategies are lacking in the Peruvian school environment (Yovera *et al.*, 2020) to combat not only bad eating habits, but also childhood obesity (Roncal, 2020). and other diseases at the regional level. However, these changes must be promoted from public policies to the participation of the educational community as a whole (Torres, 2018), since there must be awareness that the prevention of childhood obesity requires a coordinated response from all entities involved (Fernández-Gómez, December 10, 2020).

To address this situation, initiatives with community intervention have been developed to eliminate both malnutrition and anemia in the child population (Reyes *et al*

., 2019). These proposals propose solutions through school support and intervention in order to improve eating habits in the school community ( Alcoceba , 2020) . However, some studies have shown that certain consumption habits linked to fruits and vegetables are also related to overweight (Caycho, 2019). This can only be understood from Peruvian culinary culture, since some children dislike the taste of certain vegetables, even if they contain high nutritional value. On the other hand, fruits, due to their sweet flavor, can be consumed in excess, which can exceed the indicated requirements (Villanueva, 2019).

This reality coincides with the conclusions reached by most research, which relate nutritional status and eating habits (Zumaeta, 2021) . This shows that the issue is more complex than it appears, because in some regions despite the fact that there is a low percentage of obesity among students and a low rate of anemia, there is also a low consumption of foods rich in iron (Quispe and Gutiérrez , 2018). This has led to addressing poor nutrition from various levels, with proposals that range from the use of new educational strategies in the classroom, with proposals to improve content, to food investment projects so that schoolchildren acquire new habits and consume healthy and nutritious foods.

### **Habits and processed foods**

Ultra-processed products , which is why they offer everything from healthy eating strategies (Barrón, 2018) to other participatory, training, informative and regulatory ones to regulate the sale of unhealthy foods and their advertising within the community. educational (Morales, 2020). At this point, there is a consensus that overweight and obesity are associated with the impact of advertising for unhealthy foods ( *Medical Redaction* , 2020), in whose complicity the State is involved due to its inefficiency. For this reason, some proposals recommend respecting the law that promotes healthy eating, through the reading of the octagons, in force to date (Torres and Ciriaco, 2019) .

Given this, some expert reports have indicated that the consumption of processed foods does not have a generational preference (Lozano *et al* ., 2019), since it can be evident at any school age. On the other hand, in terms of social levels, greater use of ultra-processed foods has been found in populations with a low socioeconomic level (Valdez, 2019).

### **Nutritional habits and programs**

Some research has indicated that the intervention of the State is urgent, not only with laws ( Busse *et al* ., 2019), but with the implementation of comprehensive social programs, with greater coverage for vulnerable populations, that cover the basic needs of the student and that cover more than the Qaliwarma program (Paredes and Salazar, 2020).

Given this lack on the part of the State, multiple investigations have proposed, based on private financing, the production of healthy foods to prevent malnutrition and obesity (Paico, 2021). Among these are the sale of healthy snacks in kiosks as an option to combat bad consumption habits in schoolchildren, as well as healthy lunch boxes (Tarqui -Mamani and Álvarez - Dongo , 2018) with drinks, accessories and fruits to cover the energy requirement of the student (Mago, 2019)

In addition, entrepreneurship projects have been presented such as Divertilunch , which is a healthy lunch box with natural and high-quality foods, with a novel and playful presentation to please children ( Colan *et al* ., 2018), as well as the general implementation of nutritional programs such as Wawathani , which offers healthy snacks to schoolchildren receiving virtual classes (Mio and Chacón, 2021).

### **Habits and school performance**

These proposals on the use of healthy lunch boxes, in addition to being investment projects and initiatives to combat bad eating habits, have the purpose of improving academic performance ( Larico , 2020) . However, social programs by themselves do not always find the approval of students. Some research has indicated that school attendance and enrollment are conditioned by the quality of the food provided by these social programs (Panti, 2021) .

There are also some ecological proposals that indicate that the greater environmental awareness, the better healthy living habits (Vargas and Mallma , 2020), while others rely on technology, such as web applications (pedagogical resource) to improve the quality of the diet of children schoolchildren (Calvo, 2019). Research commonly indicates that the acquisition of better eating habits improves academic performance (Arévalo, 2020) and that schoolchildren who get good grades also have good eating habits (Castañeda, 2021) . Although this association is not definitive, efforts are made to correct and improve the eating habits of schoolchildren.



## Healthy hygiene habits

### Cleanliness is not the only aspect of hygiene

The objective of hygiene is to maintain a healthy body, mind and organism; However, some surveys indicate that the practice of healthy hygiene habits in primary school students in certain regions of Peru is almost non-existent (Yarleque, 2020). In fact, more broadly, there is a regular level (Rojas, 2020) of the personal hygiene habit that is also not met, since schoolchildren do not properly wash their hands before eating and after leaving the bathroom (Palomino, 2018). For this reason, some institutional proposals have focused their efforts on the implementation of a health education program to address this problem (Florián, 2019).

In addition to deficiencies in personal hygiene habits, a relationship with parasitism and poor academic performance has also been found in certain regions, situations that reduce the health status of our school population (Díaz -López , 2018). In this sense, some contributions have been presented to change hygiene habits in schoolchildren, but this involves the leaders of the educational community and the execution of a well-developed, collegiate plan with constant monitoring (Díaz - Ginéz , 2018 ) .

Various contributions point out that only with the commitment of the student community (directors, teachers, students, parents, medical staff) can good hygiene and personal hygiene practices be achieved (Figueroa, 2018) , but some complement that there must also be a adequate environmental management, designed and executed by schoolchildren to reduce the poor cleaning practices in the school and the community (Pajilla, 2019) . To achieve these objectives, some have developed didactic strategies for body hygiene (dress and footwear, and learning achievement), since they have demonstrated a direct relationship between both variables (Salas, 2019) , while others have found a link between the game symbolic and personal hygiene ( Saúñe , 2021) .

## Physical activity

Physical activity has to do with walking, running, dancing, swimming, etc., situations that require more energy than being at rest. It is a stable mechanism that creates skills or abilities, and can be used in various situations of daily life. The reviewed works highlight the need to more effectively implement physical activities at school. The investigations represent the educational reality throughout Peru and range from investigations that deepen the level of activity that takes place in certain schools in Peru to active proposals for physical exercise within the physical education curriculum.

These investigations show that there is a low level of physical activity in Peru, especially in students between 9 and 12 years old (60% of students) (Yáñez and Villar, 2022). Given this situation, the importance of the physical education area in school has been considered as a way to address the problems that cause inactivity. All of the proposals have indicated that the area of physical education should be a main component for physical activity at school and should be used as a means for the student to leave a sedentary lifestyle behind (Infantes, 2018).

Furthermore, its execution must be accompanied by the use of strategies and tools that promote a dynamic school culture (Ordas, 2019). Since it has been proven that the area of physical education helps develop certain sociomotor skills (Huayta, 2019), it is assumed that a greater prominence of this subject in the educational institution would result in an improvement in the healthy life of schoolchildren.

This opinion is demonstrated because there is a direct influence relationship between physical exercise and student nutrition (Sangay and Campos, 2022). This means that the greater the physical exercise, the better the nutrients in the body will be used, while at the same time the toxins that contract diseases will be purified. For this reason, it has also been proposed that the teaching of physical education have an interdisciplinary approach so that it influences the comprehensive training of students (Sánchez, 2018).

In this sense, there is a consensus in research referring to the area of physical education on the use of activity as a means to reduce bad habits (Zapata Domínguez, 2019). In fact, all the proposals have an active approach that invites schoolchildren to increase their physical activity. For example, there are dynamic and ecological proposals to establish a culture of bicycle use at school as part of the physical education course (Canto and Zora, 2021).

### **Sleep quality**

It is not only about sleeping well at night, but also about functioning correctly during the day, since poor quality sleep can affect several aspects of attention when it comes to learning. Sleep hours have been affected in a certain percentage of the school population, and after some research, certain conclusions have been reached. For example, sleep quality cannot always be linked to the food consumed (Zúñiga and Chávez, 2020); Likewise, it is not the eating disorder that harms the quality of sleep, although it could be especially so with certain ultra-processed foods (Sernaque, 2021). This means that there are certain foods that affect the sleep of schoolchildren, such as sodas, cookies, sugary dairy products, refined cereals, pizzas, *snacks*, *nuggets*, etc.

Another factor is technology. Although this resource has brought many benefits in education, tablets *and* digital cell phones have also caused certain problems due to their inappropriate use. For this reason, there are certain proposals to regulate the use of electronic screens, since a certain relationship has been found with the presence of sleep problems in schoolchildren (Pumacallahui, 2020). An incidence has also been found between physical inactivity and poor sleep quality (Guillén, 2021).

## Discussion

The literature review shows that schoolchildren present unhealthy practices (Roncal, 2020). Although it can be understood that these behaviors are not perceived as a risk for children, it is the responsibility of tutors and those responsible for education to guide them (Fernández-Gómez, December 10, 2020; Reyes *et al.*, 2019; Torres, 2018). In relation to physical exercise, deficiencies have been found in almost half of the child population (Yáñez and Villar, 2020), which has affected the health status of several schoolchildren (Infantes, 2018).

Regarding the nutrition of schoolchildren, there is a large percentage that has not adopted an adequate diet, which has resulted in high rates of overweight and obesity (Villanueva, 2019). Regarding hygiene habits, it is striking that several studies have found deficiencies in this aspect, such as not knowing how to wash one's hands after leaving the bathroom and before eating (Palomino, 2018), which can generate parasitosis (Díaz-López, 2018). In relation to the quality of sleep, it is observed that the inappropriate use of mobile devices and *tablets* at night affects rest (Pumacallahui, 2020). The decrease in sleep quality in schoolchildren can even last until the next night (Guillen, 2021).

In short, the proposals mostly point towards the commitment of the entire educational community, in addition to the implementation and updating of the national curriculum in the area of physical education (Huayta, 2019; Ordaz, 2019; Sangay and Campos, 2022), which on certain occasions is beyond the reach of managers, since in many of them it is the responsibility of the MINEDU.

Even so, the proposals, efforts and initiatives of the educational community are encouraging, because with awareness a great step is being taken towards solving the problem; However, the commitment of the educational community, long-term policies and a larger budget for the Peruvian educational sector are still required (Sánchez, 2018).

## Conclusion

Despite the WHO recommendations to lead a healthy lifestyle (with the consumption of fruits, vegetables and foods with little fat, sugar and salt, physical exercise for at least 30 minutes per day), and despite the efforts of the State through the MINEDU to expand the area of physical education from 3 to 5 hours per week and maintain its nutritional programs in schools, it has been shown that for the majority of the school population in Peru they have no effect, especially regarding healthy habits.

It is therefore urgent to take into account all the factors involved to address bad habits in schoolchildren, such as culture, beliefs, lack of drinking water, lack of personal hygiene items and processed foods. In this sense, it is not only about modifying the curriculum and expanding the hours of physical education, or offering basic food rations for the comprehensive development of students. This shows that changing bad habits does not just involve a few lessons at school, as it is a complex problem that deserves to be addressed from multiple areas.

It is necessary, therefore, to become aware of the seriousness of the issue and involve all social actors. The State, for example, must replicate positive experiences from other contexts to improve the healthy habits of schoolchildren, promoting information campaigns on laws that protect the consumption of healthy foods, and regulating processed foods for school-age boys and girls.

Likewise, the MINEDU needs to establish strategies and school days that help improve healthy habits. From educational institutions, it is necessary to get involved in the change by promoting better healthy habits, with the care of school snacks provided by social programs, with the promotion of healthy lunch boxes and other initiatives in favor of health. Finally, from within the family, good eating habits need to be replicated at home, with discipline and effort in the consumption of healthy foods.

## Future lines of research

Future research should cover more regions of Peru, if possible department by department, and explore various relationships with the health status of schoolchildren. New dimensions should also be addressed with healthy habits, such as physical activity levels in schoolchildren, postural habits, oral hygiene, emotional state, bullying *and* eating, etc. Likewise, the role of government policies and the increase in bad health habits. Likewise, if there is any relationship between the socioeconomic factors of family groups and healthy habits. All of these works must be aimed at confronting the poor practice of healthy habits.

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