"I Take Care of Myself" Program for Self-Care in Schoolchildren of an Educational Institution in Huánuco - Peru

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Abstracts

Objective. To determine the effectiveness of the "I take care of myself" program for self-care in schoolchildren. Methods. Quasi-experimental study with a single pre-post test group, with the participation of 120 sixth grade students of the primary level of the Educational Institution of San Pedro - Huánuco, Peru 2022, in which the "I take care of myself" Program was applied. The data collection instrument was the self-care practices scale. In the hypothesis test, the Wilcoxon statistical test was used. Results. It was found that the average score obtained in self-care before the application of the "I take care of myself" program was 3.7, and after this it was 4.0, finding significant differences in the pretest and posttest with $p \leq 0.000$. Likewise, there were significant differences in the dimensions of self-care such as practices related to universal self-care requirements, practices related to development self-care requirements, and practices related to self-care requirements in case of health deviation, all with $p \leq 0.05$. Conclusions. There are significant differences in self-care after applying the "I take care of myself" program in schoolchildren of the Educational Institution of San Pedro - Huánuco.

Keywords: self-care, diet, exercise, students.

Introduction

The practice of self-care represents a series of behaviors learned by people from the early stages of the life course, which have positive implications in all dimensions, especially in health, since numerous diseases can be avoided with adequate self-care practices, such as hand washing, body and oral hygiene (Arias & Carmona, 2017). In addition, this practice is a key element in health promotion and disease prevention (Kickbusch, 1989). They are defined as "the activities carried out by people in certain situations, with the purpose of maintaining a lively and healthy functioning and continuing with personal development and well-being" (Orem, 2001, p. 45). They include a wide range of strategies associated with hygiene, diet and lifestyles, as well as environmental and socioeconomic determinants (Arias & Carmona, 2017).

The development of this practice at an early age is extremely essential to reach a more active and healthy older age (Campbell et al., 2014). However, lately a deficit in this behavior has been reported, especially in the field of diet and physical activity, which ultimately leads to problems of obesity and overweight in this life course (Karnik & Kanekar, 2012).

According to Arias and Carmona (2017) they indicate that the practice of self-care not only has benefits in physical health, but also in the components of mental, social and spiritual health, so the development of this practice in the child makes self-esteem, self-efficacy and self-concept viable. Likewise, the World Health Organization (WHO) (2017) reports that obesity rates are still major problems worldwide, where the child population is the most affected and that they range from 1% in 1975 to 6 and 7% in 2016.

Regarding the educational scenario, studies in Latin America have found that there is a greater presence of excess weight in schoolchildren (27.7%) than in adolescents (21.5%) ($p<0.0001$). Similarly, they also conclude that in Ecuador the prevalence of excess weight is higher in private educational institutions (20.6%) than in state institutions (10.4%) (Ramos-Padilla et al., 2015).

In Colombia, the National Survey of the Nutritional Situation of Colombia (ENSIN) (2015) reveals that 24.4% of schoolchildren aged 5 to 12 are overweight.

In Peru, according to reports from the observatory of nutrition and study of overweight and obesity, in children under five years of age, the figures have remained relatively stable since 2009 with 6.8% overweight and 2.4% obesity as of 2014. In addition, in children aged 5 to 9 years, there is evidence of an increase in the prevalence of obesity; from 7.3% in 2008 to 14.8% in 2013-2014. Also, in adolescents there is an increase in prevalence from 4.9% in 2007 to 7.5% in 2013-2014 (Peru. National Institute of Health, 2017). There are several factors that drive obesity and overweight, especially those foods with a high caloric value, poor nutritional value, such as unlimited access, a decrease in physical exercise and an increase in inactivity and passive leisure linked to screens (Popkin & Hawkes, 2016; Church et al., 2011).

In the same sense, Pardos-Mainer et al., (2021) also indicate that this problem is mainly linked to the lack of physical activity, lifestyle habits and unhealthy eating behaviors.

Therefore, the school life stage is at risk in the decrease in physical activity, sedentary lifestyle and unhealthy eating behaviors, and that these in turn have been associated with obesity, cardiovascular complications such as hypertension or metabolic diseases, among others (Barceló & Borroto, 2001; Hernández & Ruiz, 2007).

On the other hand, health education allows the individual to acquire a sustained and shared responsibility in the identification and solution of the main health problems. It is characterised by continuous, active and organised action that makes participation conscious and responsible (Goiriena & Gorricho, 1998).

The World Health Organization (2020) has been promoting promotion and education programs for school health for more than three decades. In addition, a major effort to raise awareness has been prioritized, with due attention to the global epidemic of obesity and overweight (Ng, et al., 2014), in such a way that governments have developed specific policies aimed at educational

institutions, considering that they have enormous preventive potential (Fox, Cooper, & Mckenna, 2004; Story, Kaphingst, & French, 2006; Trost, 2004).

Likewise, it is evident that through research, the practice of self-care is extremely relevant in the development and maintenance of the promotion of healthy behaviors such as eating healthy, getting adequate sleep, being active, as well as in the face of specific diseases (Stacciarini & Pace, 2017; Carrillo, 2015).

Elster (2017) reports that through the review of studies carried out in four Latin American countries (Mexico, Nicaragua, Venezuela, and Chile) there is a deficit of self-care in adolescents that are the cause of 60% of the diseases diagnosed in them and that can be prevented through educational actions carried out by workers in the health and education sectors.

Barja-Fernández et al (2020) report that after several years of awareness campaigns on healthy lifestyles, there is still an urgent need in the school population to improve the eating pattern and increase physical-sports practice, especially in girls and as age increases.

Finally, however, Hattar, et al., (2011) indicate that dietary and physical activity interventions in school settings have been recognized as an excellent tool for the appropriate promotion of healthy lifestyle habits, since physically active children, with balanced nutrition, have less risk of developing obesity and chronic diseases in their lives.

Under this perspective, the objective of this research is to determine the effectiveness of the "I take care of myself" program for self-care in schoolchildren of the San Pedro - Huánuco 2022 Educational Institution.

Methodology

1. Type of study

Experimental, prospective, longitudinal and pre-experimental design study with before and after assessment and with a single group.

2. Population

The population consisted of 199 sixth-grade schoolchildren from the Educational Institution of San Pedro de Huánuco. The total sample was 120 students where they made up the Experimental Group and were selected by non-probabilistic convenience sampling. The duration of the study was from January to December 2022.

3. Procedure

A scale of self-care practices known as the Child and Adolescent Self-Care Performance Questionnaire (CASPQ) was used, which was developed by Moore (1995) in the United States and aims to evaluate self-care practices in children aged 9 to 18 years, based on Orem's theory of self-care deficit. It was a self-administered instrument composed of 35 items, with a five-point Likert-type response format, which scored: (1) never, (2) almost never, (3) sometimes, (4) almost always and (5) always. Regarding the reliability of the instrument, Cronbach's Alpha was used, with a value of 0.826.

The program was developed in seven sessions, each lasting 45 minutes during tutorial hours, after coordination with the teachers, according to the following detail:

- Session 1: Food and nutrition
- Session 2: Recreation and Leisure Management
- Session 3: Substance Use
- Session 4: Sleep and rest
- Session 5: Physical Activity and Sport
- Session 6: Self-care and health
- Session 7: Interpersonal Relationships

Finally, the pre- and post-test measurement was in person with the support of the coordinator of tutors of the sixth grade of primary school.

4. Data analysis

The description of the data was with frequency statistics and percentages. Wilcoxon's signed rank test was used to test the hypothesis. A reliability of 95.0% was used for statistical significance. The IBM SPSS Statistics 25.0 statistical package was used throughout the data processing.

Results

Regarding the general characteristics, there was a predominance of the age of 11 years, likewise, a higher percentage was represented by females and section B predominance of the other sections (Table 1).

Table 1. General characteristics of the students of the sixth grade of primary school under study

General characteristics	Frequency (n=120)	%
Age in years		
10	1	0,8
11	68	56,7
12	51	42,5
Sex		
Male	45	37,5
Female	75	62,5
Section		
To	26	21,7
B	32	26,7
C	29	24,2
D	33	27,5

Regarding the development of self-care on a scale of 1 to 5, there were differences between the moments before and after the intervention with 3.7 to 4.0; respectively (Figure 1). The same was true for the dimensions Practices related to universal self-care requirements, Practices related to developmental self-care requirements, and Practices related to self-care requirements in case of health deviation (Figure 2).

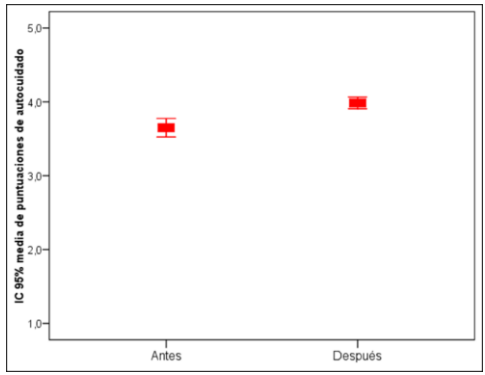

Figure 1. Development of self-care, before and after the intervention. In original language Spanish

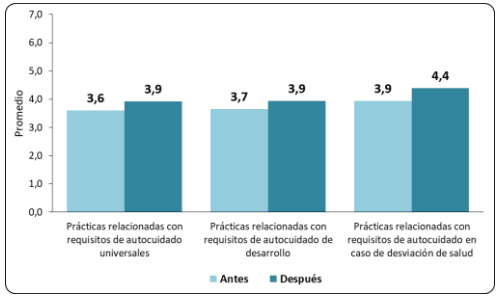

Figure 2. Dimensions of self-care development, before and after the intervention. In original language Spanish

And, with respect to the inferential analysis, significant differences were obtained between the moments before and after in the development of self-care ($p \leq 0.000$) and as in its dimensions Practices related to universal self-care requirements ($p \leq 0.001$), Practices related to developmental self-care requirements ($p \leq 0.016$) and Practices related to self-care requirements in case of health deviation ($p \leq 0, 022$) (Table 2, 3).

Table 2. Change in the development of self-care and its dimensions, before and after the intervention

Dimension	Before	After	Change
Practices related to universal self-care requirements	3,6	3,9	0,3
Practices related to developmental self-care requirements	3,7	3,9	0,3
Practices related to self-care requirements in the event of a health deviation	3,9	4,4	0,5
Total Rating	3,7	4,0	0,3

Table 3. Comparison of self-care development and its dimensions, before and after the intervention

Dimensions	Try Wilcoxon	P-Value
Self-care	-4,18	0,000
Practices related to universal self-care requirements	-3,48	0,001
Practices related to developmental self-care requirements	-2,41	0,016
Practices related to self-care requirements in the event of a health deviation	-2,29	0,022

Discussion

At the end of the study, the established objective has been met, allowing us to determine that there are significant differences in self-care in primary school children (p=0.000) from the pre- and post-intervention tests of the "I take care of myself" program. The results indicated agree with the findings obtained by Jaimovich et al (2015) who indicate that through an intervention with the active participation of students in the 5th and 6th year of basic education and their teachers, they motivate the change of behaviors linked to healthy eating.

Likewise, Rivera et al (2016) report that nutritional educational intervention by nursing corresponds to an effective strategy to promote health self-care in the school environment.

Campos et al (2013) conclude that the intervention I take care of myself designed for the project "Prevention of overweight and obesity in Chilean schoolchildren: Commitment to children's entrepreneurial capacity" promoted the change of behaviors related to food in the Orem frame of reference. Cruz and Mamani (2016) report that there was an effect of an educational intervention where it significantly modifies the self-care habits in the oral health of schoolchildren.

Ávila et al (2016) report that the intervention programs that have been analyzed show positive changes in relation to certain eating habits, such as fruit intake, and especially the increase in the level of physical activity. Fahlman et al (2008) conclude that schoolchildren improved their knowledge after the educational intervention and that this same group later on, had a greater disposition towards the consumption of healthy food and less disposition towards junk food compared to the control group.

Díaz-Sánchez and Arias-Torres (2022) report that a Family Health Nursing Intervention Program was effective in promoting compliance with healthy lifestyle habits.

It should also be mentioned that in addition to the effectiveness of educational intervention programs in improving the self-care of the schoolchildren under study, it is the presence of the family as a support and control factor in this situation (Castro-Cisterna et al., 2022).

From the scientific sphere, school age corresponds to a stage where the cognitive and motor skills that establish a person's future abilities are consolidated, among them, one of the most important corresponds to food (Holanda et al., 2016; Lapa et al., 2008); the educational institution, therefore, is also part of the construction of the opinions of schoolchildren, being the basis of culture, thought and better ways of living (Maciel et al., 2010; Luquez & Saboia, 2017; Holanda et al., 2016; Lapa et al., 2008; Ferreira et al., 2012). Therefore, the development of self-

care in the practice of schoolchildren and in the different curricula of educational institutions is a real priority, in order to stimulate in the student a group of actions that are aimed at sowing in them the importance of their care (Melo & Trujillo, 2017).

Finally, this strategy that has been developed and that had positive effects must be incorporated within the educational institution as a regular activity, this being an urgent challenge to make viable.

Conclusions

There are significant differences in self-care after applying the "I take care of myself" program in sixth grade schoolchildren, with $p \leq 0.000$. There were also significant differences in self-care in the practical dimensions related to universal self-care requirements, practices related to developmental self-care requirements, and practices related to self-care requirements in case of health deviation, all with $p \leq 0.05$. Based on the results found, we can say that as part of the professional work of nursing is the promotion of self-care, the same that is worked from the family environment, in schools to carry it out in their daily lives, it is in this sense that the practice of self-care will generate better living conditions and contribute to social progress

WORKS CITED

Arias, L.T. & Carmona, L. (2017). Education for self-care in personal hygiene: a contribution to early childhood. (Undergraduate thesis, Universidad Católica de Pereira, Colombia). http://hdl.handle.net/10785/4538 repository

Ávila, M., Huertas, F. J., & Tercedor, P. (2016). Intervention programs for the promotion of eating habits and physical activity in Spanish primary school children: systematic review. Hospital Nutrition, 33(6), 1438-1443. https://dx.doi.org/10.20960/nh.807

Barceló, M. & Borroto, G. (2001). Lifestyle: culminating factor in the onset and treatment of obesity. Rev Cub Investig Bioméd, 20(4), 287-95. Retrieved from http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0864-03002001000400009

Barja-Fernández, S., Pino, M., Portela, I. & Leis, R. (2020). Evaluation of eating and physical activity habits in Galician schoolchildren. Nutr Hosp, 37(1), 93-100. DOI: http://dx.doi.org/10.20960/nh.02668

Campos, M.C., Jaimovich, S., Campos, M.S., Herrera, L.M., Lillo, V., Martínez, D., Del Río, M.P., & Arellano, V. (2013). Mekuido: online intervention for Chilean schoolchildren to support the prevention of overweight. Chilean Journal of Nutrition, 40(1), 55-61. https://dx.doi.org/10.4067/S0717-75182013000100009

Carrillo, A.J. (2015). Analysis of self-care capacity in peritoneal dialysis patients. Enferm Nefrol, 18(1), 31-40. http://dx.doi.org/10.4321/S2254-28842015000100005.

Castro-Cisterna, S., Ochoa, S., Moya, M.P., Amoretti, E., & Soto-Sánchez, J. (2022). Intervention Programs for the Promotion of Physical Activity and Healthy Habits in Chilean Schoolchildren: A Narrative Review. Kinesiology, 41(4), 360-367.

Church, T.S., Thomas, D.M., Tudor-Locke, C., Katzmarzyk, P.T., Earnest, C.P., Rodarte, R.Q. (2011). Trends over 5 decades in U.S. occupation-related physical activity and their associations with obesity. PLoS One, 6:e19657. DOI: 10.1371/journal.pone.0019657

Cruz, S., & Mamani, G. (2016). Impact of the application of an educational strategy of self-care on oral health in schoolchildren. Rev. Evid. Odontol. Clinic., 2(2), 15-18.

Díaz-Sánchez, R., & Arias-Torres, D. (2022). Effectiveness of nursing intervention in healthy lifestyle habits from the Nola Pender model. Rev Esp Nutr Comunitaria, 28(2).

Elster, A. (2017). Guide for preventive activities in adolescents (GAPA): Editorial Díaz de Santos, third edition. S.A.; Madrid. Spain.

National Survey of the Nutritional Situation of Colombia (ENSIN). (2015). Retrieved from https://journalusco.edu.co/index.php/paca/article/view/2879/4063

Fahlman, M.M., Dake, J.A., McCaughtry, N., Martin, J. (2008). A pilot study to examine the effects of a nutrition intervention on nutrition knowledge behaviors and efficacy expectations in middle school children. J Sch Health, 78(4), 216-22.

Ferreira, I do R., Vosgerau, S., Moysés SJ, & Moysés ST. (2012). Diplomas Normativas do Programa Saúde na Escola: análise de conteúdo associada à ferramenta ATLAS TI. Ciênc Amp Saúde Coletiva.; 17(12), 3385-3398.

Fox, K., Cooper, A., & Mckenna, J. (2004). The school and promotion of children's health-enhancing physical activity: perspectives from the United Kingdom. Journal of Teaching in Physical Education, 3(4), 338-358. Doi:10.1123/jtpe.23.4.338.

Goiriena, J. & Gorricho, B. (1998). The concept of health. In: Bascones Martínez A.Tratado de Odontología.España: Trigo.

Hattar, L. N., Wilson, T.A., Tabotabo, L.A., or Brian Samith, L. A., & Abrams, S. H. (2011). Physical activity and nutrition altitudes in obese Hispanic children with non alcoholic steatohepatitis. World J. Grastroenterol 17, 4396-4403.

Hernández, M. & Ruiz, V. (2007). Obesity, a global epidemic: Implications of genetics. Rev Cub Investig Bioméd, 26(3). Retrieved from http://scielo.sld.cu/scielo.php?pid=S0864-03002007000300010&script=sci_arttext&tlng=pt

Holanda, M., Rocha, T., Gavidia, V., Maciel, H., & Fontenelle, M. (2016). Affectivity and health promotion in school: construction of meanings by the teacher. Rev Brasil Prom Saúde; 29(3), 390-398.

Jaimovich, S., Campos, C., Bustos, J., Campos, M.S., Lillo, V., Herrera, L.M., & Arellano, V. (2015). Effects of an online intervention on self-care behaviors associated with eating. Global Nursing, 14(39), 72-83. Retrieved from http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1695-61412015000300004&lng=es&tlng=es

Karnik, S. & Kanekar, A. (2012). Childhood obesity: A global public healthcrisis. Int J Prev Med, 3, 1-7.

Kickbusch, I. (1989). Self-care in health promotion. Soc Sci Med, 29, 125-30.

Lapa, C., Freitas, M., Pedroso, C., Furusato, A., & Ventura, N. (2008). Programa Embu Enxergando Melhor: a proposta de atenção integral à saúde ocular em pre-escolares. Rev Paul Pediatr; 26(2), 113-118.

Luquez, M. de S., & Saboia, M. (2017). Educational practices in health at school: an integrative review. Cult Los Cuid., (47), 175-184.

Maciel, L., Oliveira, B., Frechiani, M., Sales, M., Brotto, D de A., & Araújo, D. (2010). Project learning health in school: the experience of positive impact on the quality of life and health determinants of members of a community school in Vitória, Espírito Santo State. Ciênc Amp Saúde Coletiva.; 15(2), 389-396.

Melo, N., & Trujillo, S.M. (2017). Self-care strategies, as an alternative for the training of citizens. (Master's thesis). Pontifical Bolivarian University, Colombia.

Moore, J. B. (1995). Measuring the self-care practice of children and adolescents: instrument development. Maternal-child Nursing Journal, 23(3), 101-108.

Ng, M., Fleming, T., Robinson, M., Thomson, B, Graetz, N., Margono, C... & Gakidou, E. (2014). Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013. The Lancet, 384(9945), 766-781. Doi: 10.1016/S0140-6736(14)60460-8.

Orem, D. E. (2001). Nursing: Concepts of Practice (6th ed.). San Luis: Mosby. doi.org/10.1016/S0001-2092(07)62310-2.

Otero, X., Santos-Estevez, M., Yousif, E., & Abadía, M. F. (2023). Images on stone in sharjah emirate and reverse engineering technologies. Rock Art Research: The Journal of the Australian Rock Art Research Association (AURA), 40(1), 45-56.

Nguyen Thanh Hai, & Nguyen Thuy Duong. (2024). An Improved Environmental Management Model for Assuring Energy and Economic Prosperity. Acta Innovations, 52, 9–18. https://doi.org/10.62441/ActaInnovations.52.2

Girish N. Desai, Jagadish H. Patil, Umesh B. Deshannavar, & Prasad G. Hegde. (2024). Production of Fuel Oil from Waste Low Density Polyethylene and its Blends on Engine Performance Characteristics . Metallurgical and Materials Engineering, 30(2), 57–70. https://doi.org/10.56801/MME1067

Shakhobiddin M. Turdimetov, Mokhinur M. Musurmanova, Maftuna D. Urazalieva, Zarina A. Khudayberdieva, Nasiba Y. Esanbayeva, & Dildora E Xo'jabekova. (2024). MORPHOLOGICAL FEATURES OF MIRZACHOL OASIS SOILS AND THEIR CHANGES. ACTA INNOVATIONS, 52, 1–8. https://doi.org/10.62441/ActaInnovations.52.1

Yuliya Lakew, & Ulrika Olausson. (2023). When We Don't Want to Know More: Information Sufficiency and the Case of Swedish Flood Risks. Journal of International Crisis and Risk Communication Research , 6(1), 65–90. Retrieved from https://jicrcr.com/index.php/jicrcr/article/view/73

Szykulski, J., Miazga, B., & Wanot, J. (2024). Rock Painting Within Southern Peru in The Context of Physicochemical Analysis of Pigments. Rock Art Research: The Journal of the Australian Rock Art Research Association (AURA), 41(1), 5-27.

Mashael Nasser Ayed Al-Dosari, & Mohamed Sayed Abdellatif. (2024). The Environmental Awareness Level Among Saudi Women And Its Relationship To Sustainable Thinking. Acta Innovations, 52, 28–42. https://doi.org/10.62441/ActaInnovations.52.4

Kehinde, S. I., Moses, C., Borishade, T., Busola, S. I., Adubor, N., Obembe, N., & Asemota, F. (2023). Evolution and innovation of hedge fund strategies: a systematic review of literature and framework for future research. Acta Innovations, 50,3, pp.29-40. https://doi.org/10.62441/ActaInnovations.52.4

Andreas Schwarz, Deanna D. Sellnow, Timothy D. Sellnow, & Lakelyn E. Taylor. (2024). Instructional Risk and Crisis Communication at Higher Education Institutions during COVID-19: Insights from Practitioners in the Global South and North. Journal of International Crisis and Risk Communication Research , 7(1), 1–47. https://doi.org/10.56801/jicrcr.V7.i1.1

Sosa-Alonso, P. J. (2023). Image analysis and treatment for the detection of petroglyphs and their superimpositions: Rediscovering rock art in the Balos Ravine, Gran Canaria Island. Rock Art Research: The Journal of the Australian Rock Art Research Association (AURA), 40(2), 121-130.

Tyler G. Page, & David E. Clementson. (2023). The Power of Style: Sincerity's influence on Reputation. Journal of International Crisis and Risk Communication Research , 6(2), 4–29. Retrieved from https://jicrcr.com/index.php/jicrcr/article/view/98

World Health Organization (WHO) (2020). Global Strategy on Diet, Physical Activity and Health. The role of the school. Retrieved from https://www.who.int/dietphysicalactivity/childhood_schools/es/

World Health Organization. (2017). Obesity among children and adolescents has increased 10-fold in the last four decades. Press center. Retrieved from http://www.who.int/mediacentre/news/release/2017

Pardos-Mainer, E., Gou-Forcada, B., Sagarra-Romero, L., Calero Morales, S., & Fernández, R. (2021). Obesity, school intervention, physical activity and healthy lifestyles in Spanish children. Cuban Journal of Public Health, 47(2). Retrieved from http://www.revsaludpublica.sld.cu/index.php/spu/article/view/1096

Peru. National Institute of Health. (2017). Observatory of Nutrition and Study of Overweight and Obesity. Retrieved from http://www.observateperu.ins.gob.pe

Popkin, B.M. & Hawkes, C. (2016). Sweetening of the global diet, particularly beverages: patterns, trends, and policy responses. Lancet Endocrinol Diabetes, 4, 174-86. DOI: 10.1016/S2213-8587(15)00419-2.

Ramos-Padilla, P., Carpio-Arias, T., Delgado-López, V. & Villavicencio-Barriga, V. (2015). Overweight and obesity in schoolchildren and adolescents in the urban area of the city of Riobamba, Ecuador. Rev Esp Nutr Hum Diet, 19(1), 21-7.

Rivera, P., Castro, R. I., De la Rosa, C., Carbajal, F. E., & Maldonado, G. (2016). Nutritional educational intervention by nursing in adolescents with obesity and overweight in a public school in Ciudad Victoria. RESPYN Journal of Public Health and Nutrition, 15(3), 28–34. Retrieved from https://respyn.uanl.mx/index.php/respyn/article/view/16

Stacciarini, T.S. & Pace, A.E. (2017). Confirmatory factor analysis of the Appraisal of Self-Care Agency Scale – Revised. Rev Lat Am Enfermagem, 25(0), e2856. http://dx.doi.org/10.1590/1518-8345.1378.2856.

Story, M., Kaphingst, K., & French, S. (2006). The role of schools in obesity prevention. The Future of Children, 16(1), 109-142. Doi: 10.1353/foc.2006.0007

Trost, S. (2004). School physical education in the post-reportera: an analysis from public health. Journal of Teaching in Physical Education, 23, 318-337. Doi: 10.1123/jtpe.23.4.318