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Leading healthy lifestyles with a focus on ICT, interdisciplinarity and the school-family integrated work

Liderando estilos de vida saludable con foco en TIC, interdisciplinaria y unidad escuela-familia

Liderar estilos de vida saudáveis com foco em TIC, interdisciplinaridade e unidade escola-família

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ABSTRACT

During the COVID-19 health crisis, the development of healthy lifestyles in students of the school system has gained special significance, so this study aims to promote, through Physical Education, the formation of healthy lifestyles in the school community from the intermediate leadership, the interdisciplinary articulation, the integration of ICT and the school-family unit. In the study, a mixed paradigm was assumed; 265 students, 11 teachers and 2 directors participated. Group interviews, participant observation and the fantastic questionnaire were applied. A favorable development in the practice of physical and sports activity, as well as the improvement of nutrition habits were evidenced, and practices of the proposed action plan were institutionalized. It is concluded that the action plan can be considered as a valid way for the formation of healthy lifestyles in basic education students, in the studied context.



Keywords: Physical activity, interdisciplinarity, intermediate leadership, ICT, school-family unit.

RESUMEN

Durante la crisis sanitaria COVID-19, el desarrollo de estilos de vida saludable en estudiantes del sistema escolar ha ganado especial significación, por lo que este estudio se propone potenciar, a través de la Educación Física, la formación de estilos de vida saludable en la comunidad escolar desde el liderazgo intermedio, la articulación interdisciplinaria, la integración de las TIC y la unidad escuela-familia. En el estudio, se asumió un paradigma mixto; participaron 265 estudiantes, 11 docentes y 2 directivos. Se aplicaron entrevistas grupales, la observación participante y el cuestionario fantástico. Se evidenció un desarrollo favorable en la práctica de la actividad física y deportiva, la mejora de los hábitos de nutrición y se institucionalizaron prácticas del plan de acción propuesto. Se concluye que el plan de acción puede ser considerado como una vía válida para la formación de estilos de vida saludable en estudiantes de enseñanza básica, en el contexto estudiado.

Palabras clave: Actividad física, interdisciplinaria, liderazgo intermedio, TIC, unidad escuela-familia

SÍNTESE

Durante a crise de saúde da COVID-19, o desenvolvimento de estilos de vida saudáveis nos estudantes do sistema escolar ganhou um significado especial, pelo que este estudo visa melhorar, através da Educação Física, a formação de estilos de vida saudáveis na comunidade escolar a partir da liderança intermédia, articulação interdisciplinar, integração das TIC e unidade escola-família. No estudo, foi assumido um paradigma misto; participaram 265 estudantes, 11 professores e 2 directores. Foram utilizadas entrevistas de grupo, observação dos participantes e um questionário. Houve provas de um desenvolvimento favorável na prática da actividade física e do desporto, melhoria dos hábitos alimentares e institucionalização das práticas do plano de acção proposto. Conclui-se que o plano de acção pode ser considerado como uma forma válida para a formação de estilos de vida saudáveis nos estudantes do ensino básico, no contexto estudado.

Palavras-chave: actividade física, interdisciplinaridade, liderança intermédia, TIC, unidade escola-família.

INTRODUCTION



The present study is carried out in the commune of Padre las Casas, Chile, in a subsidized private educational institution that teaches educational levels, from kindergarten to eighth grade. It houses an enrollment of 582 students, with an average of 32 students per course. It presents a vulnerability level of 45 % to 59 %, which is associated with low levels of family income. The work modality is through two alternate school days. In the school project of the institution, the development of actions is encouraged to guarantee a healthy life for students, where physical, social and moral aspects are integrated. The experience was carried out in the context of the health crisis and in conditions of remote presence, through the use of ICT.

During 2020, it was possible to identify a crisis in the formation of healthy lifestyles in the context of the COVID-19 health crisis. The Government of Chile adopted the measure of suspending face-to-face classes and schools were forced to generate changes in the didactics processes and the modality of teaching due to the consequent damage to health; meanwhile, the configuration of a scenario of obesogenic behaviors in the students was manifested.

Healthy lifestyles, as part of the comprehensive education of students, contemplate attitudes and behaviors at school and its context and can be approached as routines that incorporate ways of eating, physical exercise and sports, hygiene and health care. mental (Torres *et al.*, 2019) and is the result of a series of habits that allow a state of complete physical, mental and social well-being that is considered key in the state of health of students (Koyama *et al.*, 2020).

Consequently, a study of healthy lifestyles was carried out in courses from 5th to 8th grade, where the following deficiencies could be identified:

- The 100 % of the participating students recognized obesity and other diseases as a consequence of low physical activity, but there was a tendency to consider that physical activity should only be done when there is obesity and not as a mechanism to guarantee a healthy life throughout the population (84 %).
- Little diversification of sports activities, 30 % of the students preferred other types of activities to those considered in the training programs, which produces apathy and little commitment to Physical Education.
- The students had theoretical notions about nutrition and food stamps, but they lacked practical processes that help in making decisions about healthy eating and hydration. 56 % of the students stated that they did not eat healthy foods at snack times or did so very rarely.
- The 99 % of the students recognized that maintaining adequate levels of hydration brings better results in academic performance and concentration towards it, however, they consume an average of only 2.4 glasses of water a day, out of a recommendation of eight.

In an analysis of previous years, a sportsmanlike approach to the teaching of Physical Education in the institution is recognized, which triggered a group of students to express demotivation towards the subject. Likewise, deficiencies were identified in the



democratization of the classroom, in the collaborative work between teachers around the formation of active and healthy lifestyles and the absence of recreational-formative activities.

In the diagnosis, the lack of opportunities for the development of a healthy lifestyle in students from 5th to 8th grade in the educational establishment was identified as the main problem, which was related to deficiencies in the development of physical and sports activities and hygiene and nutritional habits. Therefore, in the study presented, it was established as the objective: to promote, through Physical Education, the formation of healthy lifestyles in the school community from the intermediate leadership, interdisciplinary articulation, the integration of ICT and unity. school-family.

In the review of the literature that addresses the subject, educational leadership has positioned itself as an element of great importance in the teaching-learning processes and its management as an agent of change, transformer and mobilizer towards a constant educational improvement (Bolívar, 2019).

Mineduc (2015), recognizing the complexity of the dynamics in school organizations, points out that "(...) new ways to manage them must be incorporated, not only in the administrative field, but also in the pedagogical management of teaching, learning and student academic results" (p. 3). The managerial leader in the school context has the characteristic of strengthening professional capacities in teachers, providing spaces for leadership, without the need to establish hierarchical positions between one teacher and another, and maintaining relationships of mutual trust, professional development and collaborative work.

Leadership is conceived as the creation of a sense or shared vision, which mobilizes the educational institution, as a process of influence, where symmetrical relationships are established that respond to the needs of the educational system; to this end, the authors of this study are committed to intermediate leadership focused on the student as a way to promote the development of healthy lifestyles in the school community.

The educational institution is decisive in the acquisition of a healthy lifestyle from the sociocultural point of view (Salvy *et al.*, 2016), due to the large amount of time devoted to educational processes and their interactions and extracurricular activities. In this sense, the school can provide activities to promote a healthy lifestyle, where topics such as nutrition, physical exercise, sports, disease prevention, relationship with the environment, adequate rest, recreation are incorporated. and social activity (WHO, 2014).

In this line, it is conceived as desirable to build work networks through symmetrical relationships between teachers and professionals related to the area of education, in a collaborative and interdisciplinary effort that involves the family in the process of developing healthy lifestyle habits as contribution to the comprehensive education of students. This idea is based on the school-family-community unit as an educational paradigm, where the family can mediate the development of pedagogical processes while being transformed (Abreu-Valdivia and Pla-López, 2021).



Just as the school can influence the development of a healthy lifestyle, so can the family (Shepherd, 2005). This is even more relevant in the health crisis, where the teaching-learning processes have undergone changes. In this sense, interdisciplinary articulation and the use of ICT are also a key element to achieve success.

Interdisciplinary articulation (Kaittani *et al.*, 2017) is proposed from a collaborative approach, it is conceived as an ideal tool to specify educational processes, by integrating various areas with the aim of promoting better learning. In this sense, Physical Education is a means for education in movement and through movement and can provide enormous learning opportunities that transcend the scope of a particular Discipline.

Regarding the use of ICT, Cabrera *et al.* (2019) make a historical analysis, where they conclude that many teachers do not value the importance of integrating ICT in Physical Education. To a large extent, it was not until the COVID-19 health crisis that the Physical Education teacher directed efforts to make structural changes in the didactics of his Discipline to give continuity to the teaching-learning processes.

ICTs have the potential to break the temporal and geographical barriers that hinder collaboration between all the actors in the process, which can be used in favor of the development of healthy lifestyles and where a path can be configured to integrate the family in this process. In this sense, the telephone is prioritized as a connection device, since it can be used anywhere and at any time, which gives the possibility of new learning scenarios.

In the search for references on how to address healthy lifestyles from the school system, it was found that various Chilean educational institutions have healthy lifestyle projects (Rodríguez *et al.*, 2017 and Torres *et al.*, 2019) that establish regularities in the strategies for the development of this type of purposes and highlight the need to generate spaces for the participation of physical activity for the educational community (Mera *et al.*, 2020 and Torres *et al.*, 2019), promote the intake and cultivation of healthy eating (Bustos, 2021), involve the family in a formative and experiential way in the process and finally approach the Physical Education class from a formative approach that promotes the development of healthy lifestyle habits (Rodríguez *et al.*, 2017).

MATERIALS AND METHODS

Study design

The research assumed a mixed paradigm. In its qualitative component, it focused on the analysis of reality through discourse, with a socio-critical emphasis, where through an action-research design, actions aimed at transforming the educational reality were applied. From the quantitative point of view, a descriptive scope was considered in the analysis of the results on healthy lifestyles.

Participants



The study participants were 265 students. Of them, 152 male and 113 females; which is equivalent to 57 % and 43% respectively. Table 1 shows the distribution of students by courses (Table 1).

Table 1. - Distribution of participants by course

Course	Total	Male	Female
5ºI	35	23	12
5ºII	35	20	15
6ºI	30	17	13
6ºII	30	17	13
7ºI	33	16	17
7ºII	33	18	15
8ºI	35	24	11
8ºII	34	17	17
TOTAL	265	152	113

Note: Distribution of participants by course according to sex.

The inclusion criteria were considered as being part of the level studied and as exclusion criteria not consenting to be part of the study, presenting connectivity problems and intermittency in their educational processes.

An additional 11 teachers participated, who teach subjects in the second cycle of basic education. Of them, one is from Physical Education and ten teachers, from the subjects of Language, Mathematics, English, History, Natural Sciences, Religion, Indigenous Language, Technology, Arts and Music.

Instruments

Five instruments were applied: an ex ante diagnostic test with 14 questions, to assess the state of development of the students' healthy lifestyles; an observation guide with four questions ex dute, to assess the levels of success of the proposal; an interview with teachers with six questions and the management team with four questions, to analyze the effects of the applied action plan and finally, the ex post application of the fantastic questionnaire, validated and adapted by 12 experts using the three-round Delphi consensus technique. With the exception of the fantastic questionnaire, the instruments were developed ad-hoc, updated and improved during the process, from a qualitative point of view.

Procedures



Initially, an evaluated guide was applied, corresponding to the diagnostic test and with emphasis on physical activity, sports and healthy eating. The diagnostic results were processed and the average and standard deviation were determined. The analysis was carried out by means of an Excel template, where a score from 1 to 7 was given for each answer. The qualitative data of the diagnosis were processed through selective coding to determine the main thematic axes.

Subsequently, the action plan was designed and applied with all the students participating in the experience. During the process, participant observation was carried out and adjustments were made as necessary.

The fantastic questionnaire was applied, in a time of 30 minutes; in the analysis process, the recommendation of the authors of the questionnaire was followed to obtain the scores and the classification of each student according to the category observed. In all cases, a Google spreadsheet was used to support the analysis.

Finally, a group interview with teachers was carried out through the focus group and individual interview with directors and the perception of these fronts to the action plan was assessed. The results of both instruments were processed together, through a qualitative content analysis.

Action plan

Next, the action plan implemented as part of the proposal is presented, where the diagnosis, previous experiences and methodological recommendations addressed in the literature were taken into consideration (Table 2). During the process of implementing the action plan, it was adjusted significantly, based on the results obtained in the participant observation, which constituted an important element in the adaptation and improvement of the proposal.

Table 2. - Breakdown of the action plan





#	Action	Aim
1	Preparation by students of personal physical activity plans for work at home	Promote self-regulation of students in carrying out physical exercise in times of pandemic
2	Co-construction of the work plan for each unit in Physical Education and Health	Strengthen the commitment of students to the subject through the sense of belonging
3	Discussion of the law of nutritional stamps) in all courses from fifth to eighth grade.	Reinforce the need to consume healthy foods, based on the consideration of the law on nutritional labels. It is requested that this information be discussed at home.
4	Sports meeting between officials of the establishment in celebration of the day of the student.	Encourage the practice of sports activities in the school community. Emphasis is placed on the participation and promotion of physical activity in the school community
5	Motor challenge addressed to the educational community for the celebration of the international day of physical activity	Encourage the practice of sports activities in the school community. Emphasis is placed on family involvement
6	School garden project	Promote healthy food growing practices in students, together with the family
7	Physical activity plan "Let's fight sedentary lifestyle" Teaching methodology through problem-based learning (ABP) in students from fifth to eighth grade	Combat student sedentary lifestyle through a physical activity plan designed with innovative activities and personal interests. Emphasis is placed on family involvement
8	System of work gymnastics sessions for teachers and managers	Raise awareness of the practice of physical activity by teachers and managers as part of a welfare state. Emphasis is placed on incorporating the experience into the classroom
9	Learning session "Benefits of physical exercise"	Raise awareness of the practice of physical activity as a state of well-



		being in teachers and managers
10	Articulated training on healthy lifestyles through the curriculum through learning experiences in Physical Education and Natural Sciences classes	Mainstream the content and practical aspects of healthy lifestyles through the curriculum
eleven	Public account. Mainstreaming of the articulated training of healthy lifestyles between Physical Education and Natural Sciences	Make known the experience on the development (Planning, execution and evaluation) of interdisciplinary work
12	Celebration of the international day of physical activity with family and parents	Involve the family in the celebration of the international day of physical activity through a motor challenge
13	Linking school garden project for family and parents	Link the family with the student in the cultivation and consumption of healthy foods
14	Conversation with fathers, mothers and guardians about the benefits of a healthy lifestyle	Educate the family about the benefits of physical exercise

The proposal, through its 14 actions, emphasizes four elements (1), healthy eating, through the recognition and selection of the nutritional components of food; (2), physical exercise, as a transversal element in the development of Physical Education and Health classes; (3), sports and recreational activities, with the participation of the educational community in different contexts and (4), the relationship with the environment, addressed as a favorable scenario for the development of physical activity and the cultivation of healthy foods in the establishment and home.

RESULTS AND DISCUSSION

Below, the main results obtained and valued are synthetically presented, based on the fantastic test and the interviews with teachers and directors.

At the end of the intervention, there was a tendency for the students to incorporate the practice of physical exercise between 2 and 4 times a week, which is attributed to the progress in the development of the participants of a healthy lifestyle (Riebe *et al.*, 2018) and is consistent with the recommendations for physical activity at least 3 times a week (Escalante, 2011), (Figure 1). Also, it is associated with the decision to democratize sports



activities carried out during Physical Education classes and the search for workshops that make a lot of sense for students, families and teachers.

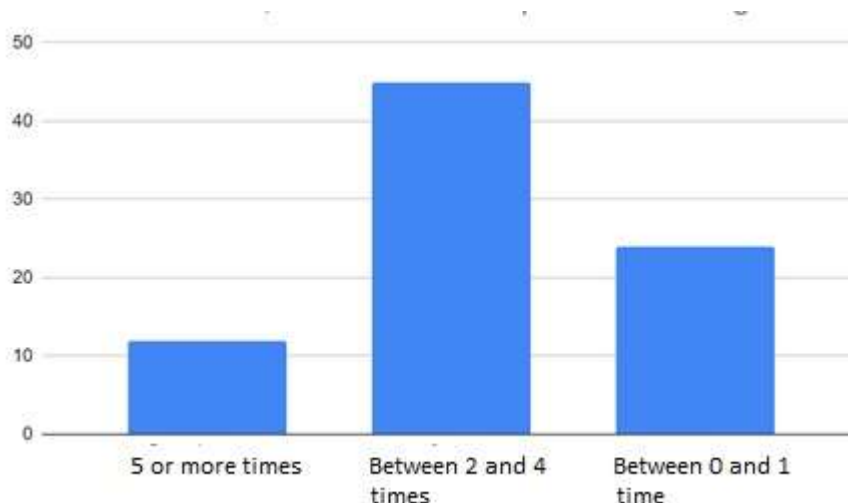


Fig. 1. - In the last seven days I have exercised for 30 minutes, intense enough to make me feel agitated and end up fatigued

Given the practice of physical exercise and sports, the management team highlighted the success of the proposal and insisted that the option of jointly designing learning experiences with students be maintained, taking into account their interests in sports and/or physical exercises and they positively valued the different instances offered from the action plan for sports participation and physical activity.

Another finding of the diagnostic test was associated with the nutrition dimension, where at the beginning there was a lack of practical processes that would help in making decisions about healthy eating and hydration and where 56 % of the students declared that they did not eat healthy foods at snack times or do it very rarely, with a water consumption of only 2.4 glasses a day. After developing the action plan, recognition was made of the achievement of a balanced daily diet where 46 % of the students affirmed that their diet was always balanced, 52 % declared that sometimes and only 2 % of the students recognized that his/her diet was never balanced. These results were associated with changes in eating habits as a result of the application of the action plan (Figure 2).



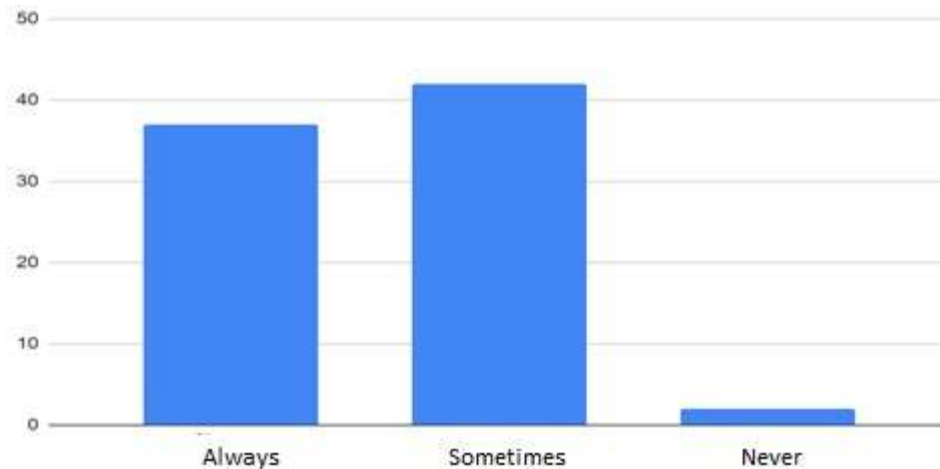


Fig. 2. - My daily diet is balanced

The students recognized that self-cultivation at home, with the support of the family and the guidelines of the practical processes at school, helped them in making decisions about healthy eating (Bustos, 2021), fundamentally, due to the commitment and motivation generated in them. In this sense, the management team positively valued the development of the school garden and highlighted the bond generated with the family in the self-cultivation process, the importance of care and respect for the environment. In addition, it supported its importance by being the only face-to-face workshop during the year 2021 in a context of return to face-to-face training in educational establishments.

When asked about the consumption of foods that contain a lot of sugar, salt, fat, sweets or junk food, the students recognized that they consume some of them. When considered holistically in the applied instrument, it was not possible to specifically establish what type of food they consumed and to be able to project specific actions in this regard; however, it was recognized that the association with the consumption of only "some of them" is fundamentally related to sugar consumption (Figure 3).

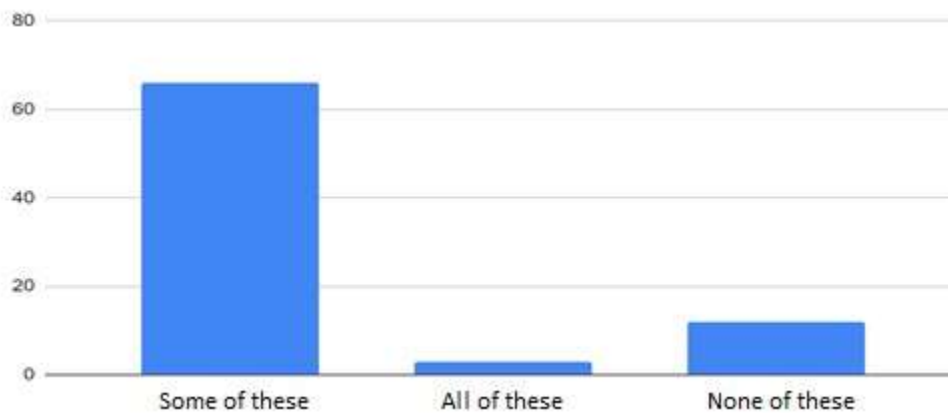


Fig. 3. - I frequently consume a lot of sugar, salt, fat, sweets or junk food



Sugar consumption, associated with poor nutritional habits, but also with the age of the students and the high availability of this type of product, is something to follow, due to the modest influence that was achieved in the proposed action plan.

Regarding the consumption of caffeinated foods, which includes energy drinks, tea and coffee consumption, among others, it was considered favorably, since 86.4 % of the students consumed caffeinated beverages less than 3 times a day (Figure 4), an aspect that is considerably different from the initial situation where the students frequently consumed caffeinated beverages.

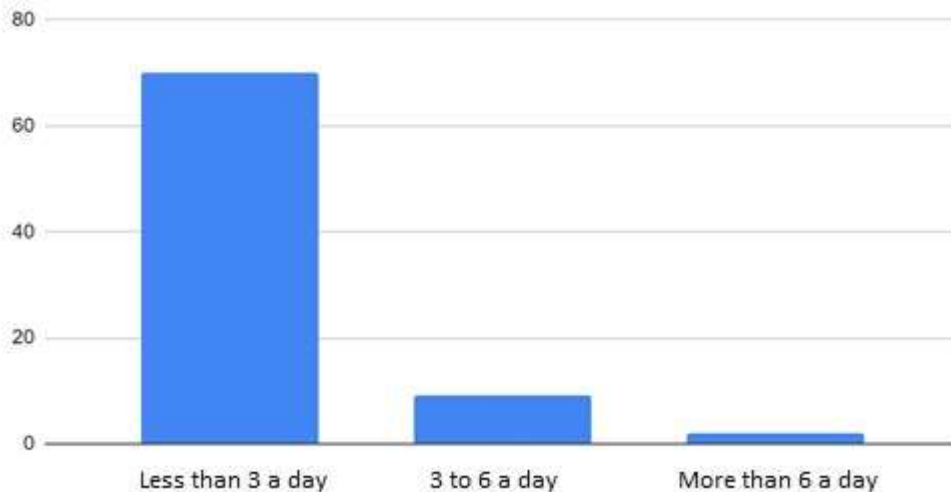


Fig. 4. - I drink drinks that contain caffeine

Finally, at a nutritional level, there is a tendency to consume the three main meals; however, there is a number, not less than that, that declared to do it only a few times. When consulting with the students, they mentioned that the least frequent meal was breakfast, which was presented as a challenge by providing dissemination spaces for the importance of breakfast for greater academic and physical performance and the development of daily activities and work with the family (Figure 5).

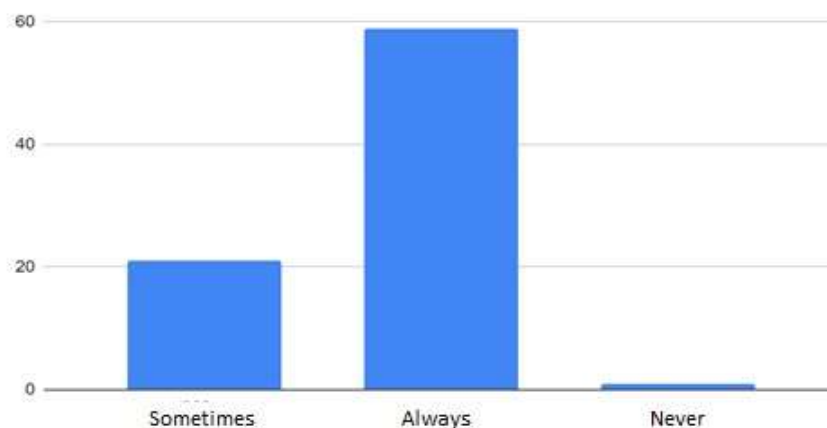


Fig. 5. - Daily at least I have breakfast, lunch and dinner



Even when multiple activities were focused on this subject, many times they imply changing deeply rooted habits in the family that are difficult to change and on which systematic work must be done to produce longer-term results, especially since from the plan of action is intended to influence practices that occur within each family.

Regarding the exercise of school leadership that was conceived as the context of the proposal, the management team recognized, through the interview, that the action plan fostered distributed leadership, with emphasis on the effectiveness of the processes (Leithwood *et al.*, 2006), fundamentally, in the way in which actions were articulated with other teachers and in the way in which the beliefs and attitudes of the students towards a healthy lifestyle were mobilized.

Regarding the awareness work, carried out with teachers of other subjects, they acknowledged having appropriated the necessary knowledge about healthy lifestyles, an aspect in which they could influence the students and be directly benefited with the results of these activities in terms of stress control, learning and execution of playful motor dynamics, relaxation and interactive games, among other elements. In this sense, it is considered very positive to have established specific actions for teachers to learn and put into practice a healthy lifestyle, due to the impact on students that all their teachers are motivated to maintain healthy lifestyles.

Regarding the mainstreaming of the curriculum, through collaborative and interdisciplinary work, it sought to satisfy a need for diversification of learning possibilities in students, teachers' perceptions were associated with favorable and characteristic aspects of interdisciplinary work, in the same way, It is posed as a challenge by proposing to integrate other subjects due to the implications that this has.

When consulting about possible improvements through the proposal, the teachers considered that it could be articulated in a next opportunity with more subjects, to achieve a greater appropriation of the content and that both teachers and students can observe how to diversify the same content, by taking into account Keep in mind that the more an educational experience is repeated or reinforced, the more likely the appropriation of knowledge can be guaranteed.

CONCLUSIONS

From the application of a diagnosis in the COVID-19 context, in a Chilean educational establishment and the proposal of an action plan, through Physical Education, the formation of healthy lifestyles in the school community from the leadership interdisciplinary articulation, the integration of ICT and the school-family unit and its implementation during a school year, it was considered that the proposal is a valid way for the formation of healthy lifestyles in basic education students, evidenced by means of changes in attitudes and behaviors in students and the positive assessment of managers, family, teachers and students on the proposal.



The existence of a significant advance in the appropriation of intermediate leadership was estimated, which highlighted the importance of this type of practice and its contribution to educational leadership in the institution that constantly seeks improvement in educational processes (Bolívar, 2019).

In the same way, it was considered important to continue with the recognition of the needs and interests of the students, since before giving an answer or solution, the causes or reasons for the problem must be identified; also, it is recommended to continue the cohesive work between the educational center and the family, from the reinforcement and modeling of the content, the behaviors and abilities of the students.

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Conflicts of interest:

The authors declare not to have any interest conflicts.



Contribution of the authors:

The authors have participated in the writing of the work and analysis of the documents.



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