

Scientific production in Chilean physical education during the period 2018-2022: a systematic review La producción científica en la Educación Física chilena durante el periodo 2018-2022: una revisión sistemática

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Abstract. The present study investigated the scientific production in Chilean Physical Education during the period 2018-2022. A bibliographic review has been performed by following the guidelines from PRISMA declaration. The Scopus database was used to find the scientific articles according to the inclusion and exclusion criteria. The search yielded 462 articles when the keywords were entered. However, once the exclusion criteria were applied, the number was reduced to 22 articles. After reviewing those documents that explicitly alluded to interventions in the field of school PE, those whose purpose was documentary or bibliographic were excluded, leaving the final number of selected articles selected as 16. After the analysis of the articles found, it is concluded that it is necessary to increase the academic productivity of Chile in the field of school interventions in Physical Education, given that most of the research addressed other educational stages or, failing that, was not focused on school development.

Keywords: Physical Education, Chile, school, education, systematic review.

Resumen. El presente estudio investigó la producción científica en Educación Física chilena durante el periodo 2018-2022. Se ha realizado una revisión bibliográfica siguiendo las directrices de la declaración PRISMA. Se utilizó la base de datos Scopus para encontrar los artículos científicos según los criterios de inclusión y exclusión. La búsqueda arrojó 462 artículos cuando se introdujeron las palabras clave. Sin embargo, una vez aplicados los criterios de exclusión, el número se redujo a 22 artículos. Tras revisar aquellos documentos que aludían explícitamente a intervenciones en el ámbito de la Educación Física escolar, se excluyeron aquellos cuya finalidad era documental o bibliográfica, quedando el número final de artículos seleccionados en 16. Tras el análisis de los artículos encontrados, se concluye que es necesario aumentar la productividad académica de Chile en el ámbito de las intervenciones escolares en Educación Física, dado que la mayoría de las investigaciones abordan otras etapas educativas o en su defecto, no estaban enfocadas en el desarrollo escolar.

Palabras clave: Educación Física, Chile, escuela, educación, revisión sistemática.

Fecha recepción: 24-02-23. Fecha de aceptación: 16-05-23

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Introduction

In the world, mainly in Asia, Europe and North America, scientific production, in general, is high compared to the rest of the continents. In the Journal Citation Report of the Web of Science and in the Scimago Journal & Country Ranking of Scopus, the United States leads the publication of scientific journals with more than 5,930 journals indexed in WoS and with more than 14 million articles published in Scopus. It is followed in a number of publications and journals by China, the United Kingdom, Germany, India, Japan, and Spain (SJC, 2022). Particularly, within Latin America, Brazil is the only country in these two rankings that is in the top 15 in terms of the number of journals and scientific articles published, being far away from its neighbouring countries of the continent but contributing within the region the largest amount of production of scientific articles within the small fraction of the total world scientific production produced by Central and South America as a whole (Andrade et al., 2013; López, 2000).

In this sense, it seems simple to determine that for the context of Physical Education (PE) in Latin America, scientific production is scarce when compared to world indicators (WoS and Scopus). However, excluding Brazil, is not simple to establish the playing role of the rest of the countries belonging to Latin America regarding the amount of scientific production in the region. According

to this, in Chile, some review studies have been carried out in this area, in which, for example, the evolution of PE journals between the years 1929 and 2013 (Pérez-Gutiérrez & Gutiérrez-García, 2015) has been analysed, as well as the level of scientific production of the journal called *Actividad Física y Ciencias* (Spanish for Physical Activity and Sciences.) within the period of the years from 2009 to 2018 (Reyes et al., 2019). In fact, the research proposal stated here is born because of one of the conclusions of these works, where it is literally declared (Pérez-Gutiérrez & Gutiérrez-García, 2015):

Future studies should analyse Chilean scientific production about Sport Sciences published at the international level and indexed in databases such as Web of Science or Scopus to complement the present results and assess the number of articles reaching the top scientific journals [p.1132].

For their part, (Rubilar-Bernal & Pérez-Gutiérrez, 2018) analysed through a historical-bibliometric method the publication in Chilean scientific journals of sports sciences in times of the military government (1973-1990), while (Pérez-Gutiérrez, 2016) presented a study of greater characteristics by analysing the scientific production in the field of Sport Sciences in Chile in a period spanning from 1912 to 2014.

In recent years, particularly affected by a series of profound social movements and political changes, accompanied by strict restrictive measures to combat the COVID-

19 pandemic, Chile has undergone changes that have affected all sectors of the population, without leaving aside the academic and research environment. However, the world of science, and specifically the one that alludes to PE has been able to overcome and continue in the search for processes that guarantee a PE that (del Val et al., 2021) "achieves the objectives established in the learning process, using active and contextualized methodologies and respecting the pace of growth of each student, so as to promote the acquisition of significant and lasting skills for students and thus favour adherence to future physical activity practice" [p.313] in short, quality PE.

Despite this, it is necessary to increase the production of research in the area of school Physical Education, given that "the need to rethink Physical Education and review the traditional contents and instrumental treatments of physical activities is evident" [Madrigal & Urrego, p. 74]. Along the same lines, Pedraza (2013) points out that the action research methodology generates reflection processes in teachers that help improve their daily practice at school, and therefore, it is necessary to investigate and systematize what happens in these processes.

Purpose of the study

In Chile, it is necessary to deepen research in Physical Education (Sánchez et al., 2022), given that currently "only concern for physical well-being is evident, forgetting psychological aspects that go hand in hand with biopsychosocial well-being" [p. 913], which in some way makes it necessary to deliver theoretical-practical tools for the future autonomous research development of Physical Education teachers [Poblete-Valderrama et al., 2019, p. 378]. According to what is indicated (Fuentes-Rubio et al., 2023), research will ensure the consolidation of learning that will make it possible to dynamize the learning that takes place in Physical Education, as well as to ensure the achievement of the competencies declared in the graduate profiles (Guerrero et al., 2022).

In view of the foregoing, the purpose of this study is to develop a systematic review of publications related to PE in Chile in the period 2018-2022 to determine what has happened to scientific production in this field, with the aim of continuing to increase the quantity and quality of these publications in favour of guaranteeing a PE in Chile as guaranteed in other countries (del Val et al., 2023; Aldana-Zavala et al., 2021; Christofaro et al., 2019).

Methods

Sources of data

The SCOPUS database was used to search for articles, the descriptor words used to be "Physical Education", "Chile", "Educación Física", "Chile", combined with the Boolean operator "AND".

Research Design

To carry out the systematic review, we propose to use

the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology (Moher et al., 2009); a methodology that was conceived to facilitate and structure the processes of systematic reviews (Urrutia & Bonfill, 2010). In addition, and according to (Almazán et al., 2015), this type of research allows reaching a meticulous selection process of the results through an exhaustive filtering process that allows obtaining a specific number of documents to be analysed according to the established criteria (see Figure 1).

Inclusion and exclusion criteria

The inclusion and exclusion criteria used were the following: (1) articles between the years 2018 and 2022, (2) articles belonging to the social sciences, (3) type of documents articles, (4) articles published in English or Spanish.

Data Analysis

Initially, the search yielded 462 articles when the keywords were entered. However, once the exclusion criteria were applied, the number was reduced to 22 articles. After reviewing those documents that explicitly alluded to interventions in the field of school PE, those whose purpose was documentary or bibliographic were excluded, leaving the final number of selected articles selected as 16.

Results

The results obtained are shown below (see Table 1), according to the 5 elements chosen for categorization: (1) journal, (2) objective, (3) methodology, (4) sample, (5) main results obtained. The order in which the articles are presented responds to a chronological order criterion so that the most recent is the first in the table. As general results, of the 16 articles analysed, 12 are published in European journals and 4 in Latin American journals, with RETOS being the predominant journal in this review. In reference to the results of the studies analysed, most of them focus on comparisons of investigated groups either with control groups or according to variables such as sex or age.

In some cases, the description of the perceptions of the subjects investigated is also reported. However, the latter to a lesser extent (25%).

Regarding the sample, most of the works refer to pupils/students (56%), followed by teachers (25%) and, lastly, to parents and/or guardians (19%), showing a preference for the studies with regards to receiving physical education over those who teach or attend it.

From the methodological perspective, in reference to the types of approach, qualitative studies represent 50% of the total number of articles analysed. This value is followed by the quantitative approach with 37%, while the mixed approach represents 13%, which implies a preference for studies of the first approach. Regarding the objectives of the studies, most of the articles reviewed (43%) describe the perceptions of the different actors of the

educational communities in relation to extracurricular aspects that could affect the physical education class. Some of these aspects are the use of the virtual classroom during

COVID-19 confinement, body image for class participation, and valuation of the class according to culture, among others.



PRISMA 2009 Diagrama de Flujo (Spanish version - versión española)

Identificación

Número de registros identificados mediante búsquedas en bases de datos
(n =)

Número de registros adicionales identificados mediante otras fuentes
(n =)

Número de registros tras eliminar citas duplicadas
(n =)

Cribado

Número de registros cribados
(n =)

Número de registros excluidos
(n =)

Idoneidad

Número de artículos de texto completo evaluados para su elegibilidad
(n =)

Número de artículos de texto completo excluidos, con sus razones
(n =)

Número de estudios incluidos en la síntesis cualitativa
(n =)

Inclusión

Número de estudios incluidos en la síntesis cuantitativa (metaanálisis)
(n =)

Figure 1. Flow diagram of the selection process of relevant articles. Source: PRISMA website: <http://www.prisma-statement.org/>

Table 1.
Research on physical education in Chile.

Authors and Year	Journal	Title	Objetives	Methodology	Sample	Results
Vagner Beserra, Miguel Nussbaum, Mónica Navarrete & Norman Garrido (2022)	Teaching and Teacher Education	Online physically active academic lessons in COVID-19 times: A pilot study	To study the perception of teachers, students and parents on the usefulness of online classes for the practice of physical activity during COVID-19 in northern Chile.	Qualitative: video recordings of the classes and focus groups	323 students and 11 teachers	The results reveal a positive perception of the experience and an increase in activity without reducing the amount of time spent on academic activities. There were also improvements in learning, social relationships, and enjoyment.

Alejandro Almonacid-Fierro, Franklin Castillo-Retamal, Ricardo Souza de Carvalho, Rodrigo Vargas-Vitoria & Rodrigo Arellano (2022)	Journal of Physical Education	Teachers' conceptions of approaches to nature-based activities in the physical education classroom.	The objective is to understand the conceptions that Physical Education teachers have about the Activities in Nature (ACN) that occur in the school context.	The research is based on the interpretative paradigm with qualitative methodology, in which a semi-structured interview was applied.	12 physical education teachers from the city of Talca-Chile.	The results indicate that these activities, among other things, contribute to a greater environmental awareness on the part of the students, making it possible to carry out different bodily practices in the natural environment.
Pierre Richard Médor, Alberto Moreno Doña & Enrique Rivera García (2022)	RETOS	Migration, Culture and Physical Education: the voices of mothers and fathers.	To analyze the perceptions of parents regarding the inclusion of their children in Physical Education (PE).	Methodologically, it is qualitative research that follows the bases of the phenomenological approach.	Fifteen semi-structured in-depth interviews were conducted with 19 proxies from 14 schools in the commune of Valdivia, Chile, from 10 different countries.	The results show fundamental aspects to be considered between the country of origin and the host country for the inclusion of migrant students based on the contributions of parents to the school. Finally, migrant parents consider it a priority that all actions aimed at inclusion be based on strict respect for human rights for all migrant and non-migrant children.
Roberto Lagos Hernández, Tatiana Jerez Fuenzalida, Gerardo Fuentes-Vilugrón, Adolfo Willschrei Barra, Karen Acuña Molina & Macarena Leichte San Martín (2022)	RETOS	Body image and participation in Physical Education classes.	To study the incidence of body image on the participation in physical education classes of 45 girls and boys between 13 and 17 years of age from educational establishments in Temuco, Chile..	Mixed approach, with a non-experimental transectional descriptive design. A systematic collection of qualitative antecedents was made through focus groups and the Body Shape Questionnaire was considered.	The following students were considered: those students who, without having a health impediment, did not participate regularly in the Physical Education class.	Ten percent of the males expressed mild concern about their body image and 24% of the females expressed moderate concern about their figure. These data correspond to the opinions expressed in the focus groups, where it could be seen that the students feel discomfort and body dissatisfaction in relation to their body, especially the female gender.
Felipe Nicolás Mujica Johnson & Nelly Del Carmen Orellana Arduiz	RETOS	Emotions of Chilean physical education teachers in the context of pandemic: a case study.	To identify, analyze and understand the emotions of physical education teachers in the context of the pandemic in Chile.	A qualitative and phenomenological methodology was used.	Five teachers from three types of educational establishments in the Valparaíso and Coquimbo Regions participated.	The results show nine codes or emotional attributions that refer to positive and negative emotions for subjective well-being. Among the emotional meanings, social inequality, teacher workload, hegemony of the intellectual sphere, teacher collaboration, pedagogical innovations and digital learning stand out.
Franco Giakoni, Pablo Paredes Bettancourt & Daniel Duclos-Bastías (2022)	RETOS	Physical education in Chile: time of dedication and its influence on physical condition, body composition and level of physical activity in schoolchildren.	To determine the influence of class size: two or four hours of physical education per week on body composition, physical condition and level of physical activity in Chilean schoolchildren.	Quantitative: various tests (EUROFIT, dynamometer model Smedley, TTM, Tokyo 100kg, triaxial accelerometer Actigraph model GT3X...).	A total of 244 school students aged 13.11 ± .84 years were evaluated.	Weight, VO ₂ max and the level of moderate and moderate-vigorous physical activity are positively modified by four hours of physical education. Men are more physically active than women and present better physical condition. Men and women with higher BMI and BMIZ-score values have a lower physical condition.
Jaime Carcamo-Oyarzun, Francisco Romero-Rojas & Isaac Estevan (2022)	RETOS	Impact of the COVID19 pandemic on the perception of motor competence of schoolchildren in the city of Temuco, Chile.	To analyze, under conditions of confinement and school closure by COVID-19, how the perception of motor competence evolves during the time when students have not had physical education in a classroom setting.	Quantitative: SEMOK questionnaire was used	A total of 104 students (52.9% girls; M = 10.9 years of age; T.D. = 0.69), who answered the SEMOK questionnaire assessing perceived motor competence, participated in both 2019 (T1) and 2020 (T2).	The students maintained a similar perception from T1 to T2, showing stability in the perception of their motor competence during this period of confinement, which coincides with the few studies that have investigated this issue following prospective procedures.

Alejandro Almonacid-Fierro, Jessica Mondaca Urrutia, Sergio Sepúlveda-Vallejos & Karla Valdebenito (2021)	Pedagogy of Physical Culture and Sports	Social representations of physical education teachers concerning the game: a qualitative study in Chile	To determine the social representations of the game in teachers belonging to the Chilean educational system, in search of the sense and meaning given by educators to the aspect of the game.	Cualitativa: entrevistas semiestructuradas	The study sample consisted of 14 Physical Education teachers, who were chosen by convenience sampling method, maintaining gender equity.	The highest category was the "role of play" (22.29%), demonstrating the relevance given by teachers to play in the development of meaningful learning. The category "characteristics of play" (17.42%) describes how teachers visualize the contribution of play at the educational level, in this sense, the role of play goes beyond motor contributions.
Pablo Cádiz Chacón, Luis Antonio Barrio Mateu, Dayneri León Valladares, Álvaro Hernández Sánchez, María Milla Palma & Milenco Sotomayor Fernández (2021)	RETOS	Contextual motivation from self-determination in Physical Education classes.	To determine the type of motivation in high school students towards the PE class at the Liceo Antonio Varas de la Barra in Arica, Chile, and its relationship between level of studies and sex.	Quantitative: the instrument used was the Perceived Locus of Causality in Physical Education Scale (Spanish adaptation).	A total of 717 students from 1st to 4th grades participated.	Intrinsic Motivation, Identified Regulation characterize the population studied, non-motivation showed low results, so that middle school students, especially males at higher levels are motivated by the Physical Education class.
Frano Giakoni-Ramírez, Daniel Duclos-Bastías & David Parra-Camacho (2021)	Revista Electrónica Educare	Influence of teachers, methodology and content of Physical Education classes in the perception of Chilean students.	To know the perception reported by students of three schools in the region of Valparaíso (Chile), in relation to satisfaction with sports activities, the Physical Education class and the role of the teaching staff.	Non-experimental, cross-sectional, descriptive design. The questionnaire measures the students' perception of the Physical Education class.	A perception scale was applied to a sample of 660 students of 7th (NB5) and 8th (NB6) of General Basic Education, belonging to three Chilean schools (municipal, subsidized, and private).	The group of men manifests greater satisfaction at the moment of executing a sports activity, considers the environment of the PE classes and the student-student and teacher-student interpersonal relationships to be important. For the group of women, it is much more significant that the PE teachers encourage a competitive spirit and fair play in their classes.
Jaime Carcamo-Oyarzun, Georg Wydrall, Claudio Hernández-Mosqueiral, Sebastián Peña-Troncoso IV & Cristian Martínez-Salazar (2020)	Cuadernos de Pesquisa	The usefulness of Physical Education according to German and Chilean schoolchildren.	To determine how schoolchildren from different cultures perceive the usefulness of Physical Education classes.	Quantitative: Questionnaire on Students' Attitudes towards Physical Education.	A total of 2748 schoolchildren were surveyed (1373 from the Araucanía Region, Chile; and 1375 from the State of Saarland, Germany).	Both Chilean and German schoolchildren recognize a "sports-recreational" utility over a "socio-educational" utility, with Chileans presenting higher values than their German peers; in addition, both groups disagree that Physical Education has been of no use to them
Jaime Carcamo-Oyarzun & Christian Herrmann (2020)	Revista española de Pedagogía	Construct validity of the MOBAK battery for the assessment of basic motor skills in elementary schoolchildren.	To determine the relationship of the covariates sex, BMI and age with motor skills. To examine the basic motor skills of primary school children in Chile.	Quantitative: MOBAK battery was used.	1785 primary schoolchildren: (MOBAK 1-2; 559 schoolchildren); (MOBAK 3-4; 496 schoolchildren); (MOBAK 5-6; 730 schoolchildren).	The results confirm the two-factor structure in all sections of the MOBAK battery, confirm the relationship of the covariates sex, BMI and age with motor skills and show that Chilean schoolchildren have low levels of motor skills, especially in the 5th and 6th grade of primary school.
Daniel Mayorga-Vega, Maribel Parra Saldías & Jesús Viciana (2020)	RETOS	Target levels of physical activity during physical education classes in Chilean students using accelerometry.	To examine the objective levels of physical activity during physical education classes in Chilean adolescents, identifying possible differences according to gender.	Quantitative: the objective levels of physical activity in a physical education class were evaluated using the GT3X accelerometer.	A total of 156 elementary school students from Chile (69 girls and 87 boys, mean age = 13.5 ± .7 years) participated.	Chilean adolescents do not comply with the recommendations of moderate-vigorous physical activity in Physical Education classes. Different strategies to increase the time spent in such moderate-vigorous physical activity are discussed as measures to be considered.
Sebastián Peña-Troncoso, Sergio Toro-Arévalo, Sonia Osses-Bustingorry & Braulio Navarro-Aburto (2019)	Revista Brasileira de CIÊNCIAS DO ESPORTE	Diagnosis of conceptual knowledge in physical education: a mixed study in Chile.	To interpret the conceptual knowledge in PE and its relationship with the meanings attributed to it by teachers in the integral formation of the discipline in the second level of secondary education in the province of Llanquihue.	Mixed-method design: Conceptual Declarative Learning in Physical Education Questionnaire (CADCEF) and Interviews	A total of 659 students and 10 professors from the different administrative units participated.	The most relevant results show in students a clear weakness of conceptual knowledge in Physical Education, even though teachers recognize important benefits and didactic strategies in the conceptual formation of the discipline.

Sebastian Peña Troncoso, Sergio Toro Arévalo, Sonia Osses Bustingorry, José Orlando Pachón Moreno & Claudio Hernández-Mosqueira (2019)	RETOS	The conceptual dimension of knowledge in Physical Education. A binational study.	To understand the conceptual dimension of knowledge in PE as expressed by students in Chile and Colombia and to establish the differences that exist in the variables of gender, country, and age.	Descriptive cross-sectional single measurement study. Questionnaire of Conceptual Declarative Learning in Physical Education (CADCEF).	A total of 576 (48.4% men and 51.6% women) aged 15 to 18 years (16.0 ± 0.8) participated. Chile (n = 301); Colombia (n = 275).	The results indicate that only 21.3% in the case of Chile and 9.5% in Colombia in the respective samples manage to exceed the average score of the questionnaire (16 points). These results show the low cultural background of Chilean and Colombian students with respect to the discipline.
Cristian Retamal-Valderrama, Pedro Delgado-Floody, Miguel Espinoza-Silva & Daniel Jerez-Mayorga (2019)	RETOS	Teacher Behavior, Intensity and Effective Time of Physical Education Classes in a Public School: An Approach to Reality.	Evaluate student PA level, class content and teacher behavior.	Descriptive cross-sectional methodological design. Quantitative: SOFIT instrument was used.	3 teachers and 480 students (230 females and 250 males).	The time dedicated to an AFMV was 32% of the EF class. In addition, 68% was destined to free practice and 90.6% the teacher did not promote the effort. As a conclusion, the results of the research indicate that the AFMV was lower than recommended and the greater time of the PE class did not promote the effort within the schoolchildren.

In the second place, representing 25% of the articles reviewed, stand out those whose objectives are oriented to describe the levels of conceptual knowledge in the field of physical education by teachers and students. In third place, with a low percentage (12.5%), follow those studies whose objectives are oriented to describe the levels of physical activity performed by students in the physical education class.

Finally, these results are followed by an article whose objective is focused on describing the effect on the emotional condition of teachers during virtual classes during COVID-19 confinement and another isolated article that focuses its objective on describing the relationship between sex, age and IQI variables with the levels of motor development acquired.

Discussion

The following is a discussion of the results obtained, analysing each of the criteria chosen for the preparation of the tables above.

Journal

Of the 16 articles analysed, 12 are published in European journals and 4 in Latin American journals. By going deeper into this breakdown, it is possible to identify how, among the European journals, the Spanish journal "RETOS" stands out significantly with a total of 9 of the 12 articles. This result is probably in line with the idea of Ossa (2014) and his statement about the close relationship between developed countries and their ability to manage "the visibility of academic journals and their research products [...] in a global network" (Romero-Torres et al., 2013, p.2).

On the other hand, elements such as low visibility and low impact factor are also aspects to be considered for this "leakage" of knowledge to international journals (Ugarte, 2004). Therefore, if national research is to be published in national journals, it is necessary that "national publishers offer researchers world-class journals [...]. To achieve journals of the highest level requires editors who are pres-

tigious scientists, professional editorial teams, and budgets commensurate with the task" (Aldana-Zavala et al., 2021; Moya Anegón et al., 2014).

Methodology

According to Rodríguez (2011), in PE there are two fundamental areas for the generation of knowledge through research. On one hand, there are "scientific works oriented to the analysis of human movement as an educational phenomenon, represented mainly by the area of Didactics of Corporal Expression and, on the other hand, the scientific production focused on the study of Physical Activity and Sport from a biological and technological perspective that studies the movement of human as a machine" (Rodríguez, 2011, p.199).

With regards to the methodology used, we can verify that, although it is true that the quantitative approach research is the one that obtains a higher percentage of prevalence, they do not do so with a great difference over that research with a qualitative approach.

For his part, Cachorro & Salazar (2010, p.9), points out that "the specificity of Physical Education makes it necessary to establish certain adaptations of research methodologies and ways of collecting data to the particularities of their objects of study".

However, based on what has been analysed, we can affirm that for research in PE in Chile, questionnaires, either already constructed and validated or in the process of validating, are the main instruments used for research.

Sample

Although there are many studies that demonstrate the fundamental role played by parents and guardians as influential agents in the practice of physical activity by their children (Vaquero Solís et al., 2020; Christofaro et al., 2019; Sala et al., 2018; Stearns et al., 2016; Romero-Cerezo et al., 2011), we have found that most of the studies are focused on work with students, with only one article that considers a figure other than the student or teacher: in this case the guardian.

In this sense, understanding the relevance of PE for the

development of social and civic competencies (Monzonis & Capllonch, 2014) and the necessary collaboration between the "family - school" binomial to achieve a greater probability of establishing continuity in the educational intervention are key aspects that should be internalized.

Objectives

The findings of the present review indicate that the main objectives of research with interventions in PE in Chile are to describe the perception of the participants of the educational communities, to describe the levels of conceptual knowledge and, to a lesser extent, to correlate anthropometric and physical condition variables with the level of motor development.

However, the curricular bases of all primary and secondary education indicate that the learning objectives for PE are organized in 3 axes: motor development in its different stages; development of an active and healthy life; safety, fair play, leadership and personal and social responsibility in sport and physical activity Chile (MinEduc 2022a; MinEduc, 2022b; MinEduc, 2022c).

This shows that Chilean research on physical education is far from describing the effectiveness of the class in correspondence with the objectives requested by the national curriculum. For the time being, there is no published scientific evidence regarding the effectiveness of methodological and didactic elements in the effectiveness of learning and the development of the axes required by the Chilean curriculum.

Results

In reference to the results of the studies analyzed, most of them focus on comparisons of researched groups either with control groups or according to variables such as sex or age.

In some cases, the description of the perceptions of the subjects investigated is also reported. However, the latter to a lesser extent (25%). Also noteworthy is the variety of topics of the treatment of PE, ranging from migration, natural environment, and body image, among others. Possibly this variation in the topics has to do with the changes in PE and the demand for an increasingly multidisciplinary praxis. This is without ignoring that there is a lack of relevant subject matter for PE. On the other hand, it is evident that there is a lack of research aimed to analyze aspects highly related to the didactics of the subject, such as evaluation processes, inclusion, or analysis of the levels of student satisfaction and attitude towards PE.

According to (Millar et al., 2021), the main fields of research in PE are "effectiveness in teaching and learning", "cognitive processes and decision-making", "teacher thinking", "student-practitioner thinking" and "group ecology". However, when analyzing the results of the selected articles, we found that most of the research is focused on comparisons of the groups investigated, either with other control groups or through different variables

such as sex.

Regarding the sample, most of the works are referred to the treatment of pupils/students (48%), followed by students and teachers jointly (18.75%) and teachers (18.75%), and lastly, there is one publication oriented to parents and/or guardians (6.25%), which shows a preference of the studies for those who receive physical education, over those who teach or attend it. It is striking that there is only one study where responsible adults appear in their role as parents and/or guardians and in that direction as (Salas et al., 2018) points out, it will be necessary to conduct future research to establish the relationship between physical education and adults responsible for schoolchildren.

Conclusion

The fact that scientific production in Latin America is low is a proven reality. In fact, at the international level, it barely reaches 3% of total productivity (Ochoa, 2004). In this sense, in Chile, of the 56 articles that meet the inclusion and exclusion criteria, only 16 (28.5%) respond to a school intervention process. These data are not far from other countries, such as Ecuador, with a total of 21 articles, of which only 2 (9.5%) respond to a school intervention process. IN the same line, the data from Colombia is not very encouraging either, with a total of 48 articles, of which 9 (18.75%) are about school interventions. This reality contrasts with other findings, for example, in Spain, where the search yields a total of 244 articles, of which 92 (37.7%) are related to a school intervention process. Otherwise, we are aware that the context generated by the COVID-19 pandemic is a conditioning factor for research (Haeffner-Cavillon & Graillot-Gak, 2009) (in fact, only 3 of the 16 articles were written during this period).

However, what we fail to understand is why there is a disconnection between the curricular contents and the research proposed, where, for example, we can see that contents such as corporal expression or folklore are conspicuous by their absence in the research field.

As a result of the results obtained, we are faced with a reality that, in our opinion, becomes a challenge; to increase Chile's academic productivity in the field of school interventions in Physical Education, because as Madrigal & Urrego point out (Madrigal & Urrego, 2013):

Teachers require continuous training, and universities must tune in to these needs, which implies a frequent and deep approach to the pedagogical practices that are developed in physical education to identify what they really need and respond in a timely manner with offers that favourably impact teacher training and transform their practices towards holistic and integrative proposals with other areas [p. 74].

Therefore, it is necessary to investigate what is done in Physical Education classes and promote that the tests are more comprehensive and cover all the dimensions found in

the plans and programs of the Ministry of Education and not be related only to performance and physical condition (Rodríguez-Rodríguez et al., 2016).

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