# ${f 05}$ - HEALTH INCENTIVE AND THE PHYSICAL EDUCATION TEACHER: A SYSTEMATIC REVIEW FROM 2014 TO 2018

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doi:10.16887/89.a1.5

#### INTRODUCTION

Public health work opportunities for the physical education teacher have been expanded. Consequently, there was an increase in the scientific production that involved physical education in the National Health Policies (NSP) and in the possibilities of intervention and interlocution with the Unified Health System (SUS - Sistema Único de Saúde) (FREITAS et al., 2013). Carvalho et al. (2016) state that among the professional categories registered at the Health Center / Basic Health Unit at CNES, which had the highest national growth rates (above 70%), are physical education professionals, nutritionists, occupational therapists, physiotherapists and pharmaceuticals.

The practice of physical activity among Brazilian adolescents is no longer a form of social interaction (BARBOSA FILHO, CAMPOS, LOPES, 2014). In the past, adolescents regularly engaged in spontaneous physical activities on the streets (such as playing betes, cycling and hopscotch) and at the same time it was possible to have fun, make friends and indirectly improve the components of physical fitness related to health (LACHAPELLE, 2015). With the advancements in technology, time spent on television has declined in the last decade, but the reduction is offset by the time spent with other display devices (such as smartphones, tablets, and computers) that become more attractive to teenagers than the different forms of physical activities (IBGE, 2015).

Physical activity is just one of the lifestyle aspects that plays a very important role in primary and secondary education, and prevention of diseases and disorders, e.g. cardiovascular disease (NOCON, 2008), obesity (JAKICIC, 2015), type II diabetes (COLBERG and GRIECO, 2009), osteoporosis (MOAYYERI, 2008) and low back pain (SCHALLER, FROBOESE, 2014). Obesity is strongly associated with a variety of negative health outcomes, including diabetes, cardiovascular disease, sleep apnea, and body ailments (GROVER et al., 2015; JENSEN et al., 2014; PI-SUNYER et al., 1998). Regular physical activity from childhood to adolescence is associated with physical and psychological benefits in the short and long term, as well as representing an important component for a healthy lifestyle and for health promotion (HALLAL et al., 2006). The physical education teacher plays a fundamental role in encouraging health, in what refers to the performance in schools and even in public health, since its activities promote the increase and maintenance of the health of children, adolescents, and adults.

From this brief contextualization, the present study aims to analyze the relationship between health incentive and physical education teacher from 2014 to 2018, through a systematic review.

#### **METHODOLOGY**

The research method used was systematic review. The methodology was divided into two parts. The first part of the methodology is presented in Figure 1.

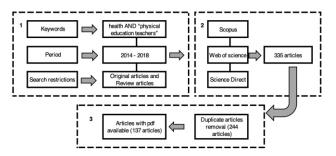


Figure 1 – Research stages for Articles in the Bases Source: Authors (2018)

Figure 1 is divided into three stages. Step 1 is divided initially into keywords' choice, defined as: "Health" e "Physical Education Teachers"; followed by the period chosen to carry out the search, defined from 2014 to 2018. Finally, the search restrictions have merely resulted in original articles and review articles. Step 2 was the choice of the databases in which the articles (Scopus, Web of Science, and Science Direct) would be searched, resulting in 335 articles. Step 3 was restricted in eliminating duplicate articles, which resulted in 244 articles and checking those with pdf file available, finally resulting in 137 articles.

The second part of the methodology was given by the content organization in a table, as shown in Figure 2.

Ranking	Article	IF	Year	CI	InOrdinatio

Figure 2 – Articles ordination Source: Authors (2018)

In the Figure 2, item "Article" the complete title of the article was inserted, in "FI" the impact factor (JCR - Journal Citation Reports), the year of article's publication and "Ci", the number of citations of the article according to Google Scholar. Finally, the articles were classified in a "ranking" by applying the InOrdinatio [(Fi / 1000) +  $\alpha$  \* [10 - (YearResearch – YearPublication)] + ( $\Sigma$  Ci)] equation, assuming 10 for  $\alpha$ , considering that the year factor is relevant to the researched topic.

The InOrdinatio equation was proposed by Pagani, Kovaleski and Resende (2015) to offer assistance in the decision-making process regarding the scientific relevance definition of each article using three criteria (impact factor, year of publication, and number of citations by the process proposed).

By the end, articles with InOrdinatio greater than 100 were selected for reading and systematic analysis, totaling 23 articles.

#### **RESULTS AND DISCUSSIONS**

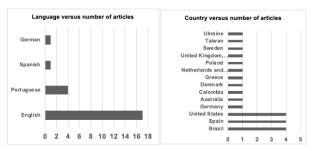
The InOrdinatio applications results, with an InOrdinatio index greater than 100, are presented in Table 1.

Ranking	Article	IF	Year	Ci	InOrdinatio
1	Reliability of Health-Related Physical Fitness Tests among Colombian Children and Adolescents: The FUPRECOL Study	2,766	2015	56	126
2	Adolescents' perspectives on the barriers and facilitators of physical activity: A systematic review of qualitative studies	1,479	2014	54	114
3	Weight Bias and Stigma: Public Health Implications and Structural Solutions	6,143	2018	7	107
4	Entering the field: beginning teachers' positioning experiences of the staffroom	2,769	2018	3	103
5	The relationship between physical activity and work ability – A Cross-sectional study of teachers	1,367	2018	2	102
6	Association of Anthropometric and Lifestyle Parameters with Fitness Levels in Greek Schoolchildren: Results from the EYZHN Program	0	2018	2	102
7	The Application of an Implementation Science Framework to Comprehensive School Physical Activity Programs: Be a Champion!	0	2018	2	102
8	Physical education teachers' satisfaction of psychological needs and goal orientations towards their students	0	2018	2	102
9	Does teacher evaluation based on student performance predict motivation, well-being, and ill-being?	2,299	2018	1	101
10	Initial Outcomes of a Participatory-Based, Competency-Building Approach to Increasing Physical Education Teachers' Physical Activity Promotion and Students' Physical Activity: A Pilot Study	1,899	2018	1	101
11	Teachers' knowledge about type 1 diabetes in south of Spain public schools	2,548	2018	0	100
12	The ATLAS school-based health promotion programme: Does a need-supportive learning context help to motivate adolescent boys?	2,422	2018	0	100
13	Long-term follow-up on biological risk factors, adiposity, and cardiorespiratory fitness development in a physical education intervention: a natural experiment (CHAMPS-study DK)	2,42	2018	0	100
14	Health Literacy Teaching Beliefs, Attitudes, Efficacy, and Intentions of Middle School Health and Physical Education Teachers	1,935	2018	0	100
15	Back to school physical education despite rheumatism: Development and testing of a sport scientific-based physical education certification	0,697	2018	0	100
16	Efeitos da prática orientada de exercícios físicos em pacientes do SUS no município de Canela, Brasil	0	2018	0	100
17	Needs and dynamics of the primary healthcare workforce in Brazil	0	2018	0	100
18	Physical Fitness Test Administration Practices and Students' Cognitive Understanding of Physical Fitness	0	2018	0	100
19	O trabalho do professor de educação física nos <u>Caps</u> de Goiânia: identificando as oficinas terapêuticas	0	2018	0	100
20	Physical activity associated with health-related fitness in adolescents	0	2018	0	100
21	Practical knowledge of preservice physical education teachers: Content and influence of acculturation	0	2018	0	100
22	The three-axes model of planning in physical education	0	2018	0	100
23	Physical Education Teachers' Perspectives in a Changing World: From Future Studies to New Physical Culture	0	2018	0	100

Table 1 – Final Result of Systematic Review

Source: Authors (2018)

It can be seen in Table 1 that 23 articles were selected for analysis. Graph 1 shows the number of articles available per language and in which country each of the studies was developed.



Graph 1 – Number of articles available per language and country where each study was developed Source: Authors (2018)

The largest number of studies (52%) was developed in the United States, Spain, and Brazil. Of the total, 18 articles are

### FIEP BULLETIN

available in English. Analyzing all 23 papers, eight articles applied a questionnaire, two articles were systematic reviews, two articles used interviews and the others used other methodologies, as can be observed in detail in the following table. Table 2 presents the analysis of the 23 articles mapped in the literature according to the InOrdinatio method from 2014 to 2018, regarding the relationship between health and physical education teacher, presenting the authors, the country in which the study was developed, and the main methodologies used.

HEALTH INCENTIVE AND THE PHYSICAL EDUCATION TEACHER	Authors	Country	Methodology
The "FUPRECOL Study" conducted by physical education teachers is reliable for assessing the physical fitness levels of children and adolescents in a school environment in Colombia.	Ramirez- Velez et al. (2015)	Colombia	Application of the FUPRECOL Study
According to the study the main facilitators to perform physical activities mainly for gifts are: attitude, motivation, perceptions of competence and body image, fun, friends, family and physical education teachers influence, and environmental opportunities of physical activity. Only specific periods of life transition were referred to as a barrier to physical activity.	Martins et al. (2014)	United Kingdom, Canada, Australia, and United States	Systematic Review
The stigmatization of individuals with obesity occurs in the workplace, schools, health care and media. Weight stigma threatens the social identity of people with obesity and can lead to the internalization of prejudice and this negatively affects health through biological (stress) and behavioral factors (eg., higher caloric intake). There are opportunities for policy implementation to reduce workplace discrimination, teasing/bullying in schools, stigmatizing messages, and discriminatory treatment in health care.	Pearl (2018)	United States	Systematic Review
This study emphasizes the differences in the socialization processes of the first year of teaching for health and physical education teachers.	Christensen et al. (2018)	Australia	An Approach to Narrative Research
The study involved 171 teachers aged between 24 and 63 from primary and secondary schools, randomly selected from the cities of Upper Silesia, Poland. Teachers from different specialities, excluding physical education teachers, were surveyed to evaluate the relationship between physical activity and perceived work capacity among teachers. Just over 50% of the teachers studied complied with the WHO recommendation.	Grabara, Nawrocka and Powerska- Didkowska (2018)	Poland	International Physical Activity Questionnaire (IPAQ-SF) / Work Ability Index. ( <b>WAI</b> )
Anthropometric features such as excess body weight and increased abdominal fat accumulation, as well as litestyle parameters, including lack of physical activity and adoption of inappropriate eating habits, are strongly and positively associated with low physical fitness in childhood and adolescence. Emphasis should be placed primarily on preventing childhood obesity and abdominal adiposity, and secondarily on providing students with adequate stimuli to engage in physical activity and to follow a prudent dietary pattern with a view to making beneficial changes in their physical fitness and health.	Amaoutis et al. (2018)	Greece	Euroffi Tests / Questionnaire
Comprehensive School Physical Activity Programs (CSPAPs) have been endorsed as a promising strategy for increasing youth physical activity in school environments.	Moore et al. (2018)	United States	Comprehensive School Physical Activity Program (CSPAP)
Correlations between the motivational orientation for the task and the satisfaction of the competence, affiliation, autonomy and utility needs of the physical education teachers in their classes were identified. The importance and influence of the physical education teachers motivational orientation and the satisfaction of their psychological needs in the promotion of the physical-sports activity of their students is proven.	Supervia et al. (2018)	Spain	Needs Satisfaction Scale (ESANPE) and Perception of Success Questionnaire (POSQ)
Teacher evaluation based on student performance can affect the motivation and well-being of the teacher. Schools should consider managers' leadership styles with an emphasis on helping them minimize coercive strategies such as rewards and comparisons with others, and instead promote autonomous teacher motivation for the job.	Cuevas et al. (2018)	Spain	Questionnaire
The effects of a professional development workshop competency and participation-based, about physical activity promotion practices of physical education teachers, allows positive results in the implementation of practices to promote physical activity of students.	Weaver et al. (2018)	United States	Systematic use of observation of physical education classes
Factors associated with teacher knowledge about diabetes reveal that teachers with 15 years of teaching experience and physical education teachers had better knowledge than their co-workers. It is necessary to improve the knowledge of teachers about diabetes in the health area, aiming to improve the safety of children and adolescents' students in schools.	Gutiérrez- Manzanedo et al. (2018)	Spain	Descriptive Observational Study
The Active Teen Leaders Avoiding Screen-Time (ATLAS) program is designed to engage male adolescents in physical activity, reduce sugary drink intake, and limit recreational screen time. Incorporating health promotion programs into a supportive context can help foster the motivation and self-regulation needed to maintain healthier behaviors.	Dongen et al. (2018)	Netherlands and Australia	Interview
A physical activity increase program in 270 minutes per week of physical education did not materialize in statistically significant differences in risk markers. However, physical activity programs developed at school can benefit from the incorporation of behavioral transformation tools into leisure time and increase the likelihood of achieving relevance for public health.	Tarp et al. (2018)	Denmark	Natural Experiment Monitoring

The teaching of beliefs, attitudes, and efficacy were crucial predictors of the intentions of teaching health literacy. To improve literacy in student health, educational authorities and schools could focus on the intentions and vital factors of Higher Education and Physical Education teachers, increasing teachers' willingness to undertake literacy instruction in health.	<u>Lai</u> et al. (2018)	Taiwan	Questionnaire
Participation in physical education is a relevant element for children with chronic diseases. In this study, 50 patients and 31 teachers were evaluated. The pain affliction decreased in terms of frequency, amount, and duration after physical education with RSK (Rheuma and Sport Kompass) No worsening of health was reported after participation in sports. The teachers rated RSK as understandable, feasible, and they felt confident to allow patients to attend classes. With RSK, patients may be advised to safely participate in physical education.	Hartmann et al. (2018)	Germany	Development and implementation of a prototype for rheumatism and sport compass (Rheuma and Sport Kompass, RSK) based on the literature.
The effects of the guided physical exercises practice on patients referred by physicians of the Estrategia de Saude da Familia teams in the city of Canela. Rio Grande do Sul, Brazil, present positive results. The exercises performed at the SUS gym under direct supervision of the physical education teacher had favorable results regarding walking intensity, anthropometric indicators of overweight/obesity, and perceived quality of life.	Azevedo and Mundstock (2018)	Brazil	WHOQOL-BREF questionnaire developed by WHO / Medical examinations / Individual anamnesis; anthropometric evaluation of body mass; height, perimetry and skinfold
The growth and regional distribution of higher education professions registered in <u>Unidades Baisas</u> de <u>Saúde</u> , (UBS) shows that from 2008 to 2013, among the professional categories with the highest rates of national growth are physical education teachers, nutritionists, occupational therapists, physiotherapists, and pharmacists.	Carvalho et al. (2018)	Brazil	Data was extracted from the online database from Departamento de Informática do Ministério da Saúde (DATASUS)
We sought to investigate whether there is a structured process for Physical Education teachers to help their students develop an understanding of the components of the health-related physical fitness test before and after the test by interpreting the results. Most of the physical education teachers provided few or no instruction on health-related fitness. Half of the teachers did not pass the test results to the students. The interpretation of test results for students are underpretation of test results for students are underpretation of test results for students can be a valuable assessment that leads students to be more likely to adopt an active lifestyle.	Eastham (2018)	United States	Interview
The organization and the main characteristics of the therapeutic workshops with the participation of physical education teachers of the Centros de Atenção Calocasocial (Caps) in Golania, demonstrate the strength and influence of the traditional contents related to the perspective of the physical aptitude as legitimating the practice of the professional of physical education.	Furtado et al. (2018)	Brazil	Structured search as a tool for data collection.
The weekly frequency of structured physical activities performed in the out-of-school environment and supervised by a Physical Education professional was positively associated with indicators of musculoskeletal fitness (jumping height and relative power) regardless of gender, age, and BMI z scores for adolescents. The results suggest that structured activities practice can provide the necessary intensity for the improvement of components of physical fitness related to adolescent health.	Rodrigues et al. (2018)	Brazil	Questionnaire
Identify the content of teachers' practical knowledge and the influence of their acculturation experiences on their practical knowledge.	Romar. Astrom e Ferry (2018)	Sweden	Questionnaire
Presentation of a practical framework that guides physical education teachers in the decision-making process during teaching planning. The three-stage planning model is discussed as a guide to Physical Education planning, assisting teachers through practical recommendations and proposing strategies in each axis in order to prepare effective Physical Education planning.	Viciana e Maxorga- Veja (2018)	Spain	Three-axis model for planning
A comparative analysis of the fundamentals of future studies was made using examples from the academic journal Future Human Image, which specializes in future studies, as well as the perspectives of physical education teachers revealed in the Journal of Teaching in Physical Education.	Voitovaka e Tolochko (2018)	Ukraine	Comparative Analysis

Table 2 – Health Incentive and Physical Education Teacher Source: Authors (2018)

It was verified that there is a relationship between the health incentive and the physical education teacher. Rodrigues et al. (2018) mention that the practice of structured activities can offer the necessary intensity for the improvement of components of physical fitness related to adolescent health. Ramirez-Velez et al. (2015) present a study that evaluates the physical fitness levels of children and adolescents in a school environment in the Colombian scenario, conducted by physical education teachers. Furtado et al. (2018) demonstrate the strength and influence of traditional content related to the perspective of physical fitness legitimating the practice of the physical education professional.

A study by Eastham (2018) examines the physical education teacher's physical fitness test administration practices, specifically how physical education teachers helped their students to develop a cognitive understanding of the components of health-related physical fitness before and after the test. Students' knowledge of these results can be a valuable information that leads learners to be more likely to adopt an active lifestyle.

The main facilitators for practicing physical activities are the following: attitude, motivation, perceptions of competence and body image, fun, friends, family and physical education teachers influence, and environmental opportunities of physical activity (Martins et al., 2014). Three studies present themes focused on the physical education teacher, as well as the socialization of the teacher's first year of performance (CHRISTENSEN et al., 2018); the correlation between motivational orientation and classroom performance (Supervia et al., 2018) and a study that shows that teacher evaluation based on student performance can affect teacher motivation and well-being (CUEVAS et al., 2018). Four studies promote topics related to teacher

education, such as practical knowledge and the influence of their experiences (ROMAR, ASTROM, FERREIRA, 2018); effects of a professional development workshop (Weaver et al., 2018); teacher's knowledge about diabetes (GUTIÉRREZ-MANZANEDO et al., 2018) and health literacy instruction (LAI et al., 2018).

Three studies present programs concerned with physical activity in schools, including: Comprehensive School Physical Activity Programs (CSPAPs) (Moore et al., 2018); the Active Teen Leaders Avoiding Screen-time (ATLAS) program (DONGEN et al., 2018) and a physical activity increase program in of physical education for 270 minutes per week (TARP et al., 2018).

Finally, studies were concerned with obesity (Pearl, 2018), and body weight excess and increased abdominal fat accumulation (ARNAOUTIS et al., 2018); and a study focuses on the physical education participation as an important element for children with chronic diseases (HARTMANN et al., 2018).

#### CONCLUSION

The objective of this study was to analyze the relationship between health incentive and physical education teacher between 2014 and 2018, through a systematic review. The goal was met with the explanation of the main studies that included the encouragement of health and physical education teacher in the last five years.

Twenty-three studies were mapped in the literature, which pointed out the concern and relationship between health incentive and physical education teacher. It is observed that the physical education teacher is the protagonist of the incentive to health, according to research that demonstrates the concern of performing physical activities in a structured way, teachers assessing the physical fitness of students, teachers considered the motivators of physical activity, and added to this, it is highlighted the concern observed regarding the training of physical education teacher.

It is concluded that with the encouragement of health promoted by physical education teachers, the intensity and frequency of physical activities provide better health conditions, as well as can be a support to diseases prevention. As a future study, it is proposed to raise and quantify pedagogical methodologies used by physical education teachers to encourage students to practice physical activities and guide them to understand the importance of this practice, which consequently are an incentive to health.

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### HEALTH INCENTIVE AND THE PHYSICAL EDUCATION TEACHER: A SYSTEMATIC REVIEW FROM 2014 TO 2018

The regular practice of physical activity since childhood and adolescence is associated with physical and psychological benefits in the short and long term. The physical education teacher is a fundamental factor to encourage physical activity, which is directly related to the improvement and maintenance of health. This study aims to analyze the relationship between health incentive and physical education teacher from 2014 to 2018, through a systematic review. The methodology used was based on the application of the InOrdinario equation, resulting in 23 articles for analysis. The results emphasize aspects such as the importance of the physical education teacher, both in schools and in public health, and its relationship with the prevention of diseases. We conclude that the greater the intensity and frequency of physical activity, the health conditions will be expanded, as well as the prevention of diseases. The physical education teacher plays a fundamental role in encouraging health, in what refers to the performance in schools and even in public health, since its activities promote improvement and maintenance of the health of children, adolescents and adults, either through the implementation of related programs health, investing in training, or acting in the public healthcare system.

Keywords: Health; Physical Activity; Physical Education Teacher.

# L'INSTIGATION À LA SANTÉ ET LE PROFESSEUR D'ÉDUCATION PHYSIQUE: UN EXAMEN SYSTÉMATIQUE ENTRE 2014 ET 2018

La pratique régulière d'activités physiques, à partir de l'enfance et/ou de l'adolescence est associée à des bénéfices physiques et psychologiques à court et à long terme. Le rôle de l'enseignant d'éducation physique est fondamental à l'instigation et la pratique d'une activité physique liée à l'amélioration et au maintien de la santé. Cette étude a pour objectif d'analyser le lien entre l'instigation à la santé et le professeur d'éducation physique. Un examen systématique de la litérature a été effectué entre 2014 et 2018. À partir de l'application de l'équation InOrdinario, 23 articles ont été retenus pour l'analyse. Les résultats démontrent de l'importance du professeur d'éducation physique dans les écoles et dans la santé publique et son lien avec la prévention des maladies. Nous concluons que l'intensité et la fréquence de l'activité physique sont proportionnelles à l'état de santé, ainsi que la prévention des maladies.

Mots-clés: Santé; Activité Physique; Professeur D'éducation Physique.

2018

## EL INCENTIVO A LA SALUD Y EL PROFESOR DE EDUCACIÓN FÍSICA: UNA REVISIÓN SISTEMÁTICA DESDE 2014 A 2018

La práctica regular de actividad física desde la infancia y adolescencia está asociada a beneficios físicos y psicológicos a corto y largo plazo. El profesor de educación física es factor fundamental en el incentivo para realizar actividad física, la cual está directamente relacionada a mejorar y mantener la salud. Este estudio tiene por objetivo analizar la relación entre el incentivo a la salud y el profesor de educación física desde 2014 a 2018, por medio de una revisión sistemática. La metodología utilizada se basó en la aplicación de la ecuación Inordinario, resultando en 23 artículos para análisis. Los resultados enfatizan aspectos como la importancia del profesor de educación física tanto en escuelas como en la salud pública y su relación con la prevención de enfermedades. Se concluye que cuanto mayor la intensidad y frecuencia de actividad física, las condiciones de salud serán ampliadas del mismo modo también para prevenir dolencias. El profesor de educación física ejerce un papel fundamental en el incentivo a la salud en lo que trata sobre la actuación en las escuelas e incluso en la salud pública, pues sus actividades propician una mejora y cuidado de la salud de niños, adolescentes, jóvenes y adultos, así sea a través del implemento de programas relacionados a la salud, invirtiendo en la formación o actuando en las áreas de la salud de la red pública.

Palabras Claves: Salud: Actividad Física: Profesor de Educación Física.

### INCENTIVO À SAÚDE E O PROFESSOR DE EDUCAÇÃO FÍSICA: UMA REVISÃO SISTEMÁTICA ENTRE 2014 A

A prática regular de atividade física, desde a infância e adolescência, está associada a benefícios físicos e psicológicos a curto e longo prazo. O professor de educação física é fator fundamental no incentivo a realização de atividade física, que está diretamente relacionada a melhoria e a manutenção da saúde. Este estudo tem por objetivo analisar a relação entre o incentivo a saúde e o professor de educação física de 2014 a 2018, por meio de uma revisão sistemática. A metodologia utilizada baseou-se na aplicação da equação InOrdinario, resultando em 23 artigos para análise. Os resultados enfatizam aspectos como a importância do professor de educação física, tanto em escolas quanto na saúde pública e sua relação com a prevenção de doenças. Conclui-se que quanto maior a intensidade e a frequência da atividade física, as condições de saúde serão ampliadas, assim como pode prevenir de doenças. O professor de educação física exerce papel fundamental no incentivo à saúde, no que se refere a atuação nas escolas e inclusive na saúde pública, pois suas atividades propiciam melhoria e manutenção da saúde de crianças, adolescentes e adultos, seja através da implementação de programas relacionados à saúde, investindo na formação ou atuando nas áreas da saúde da rede pública.

Palavras-Chaves: Saúde; Atividade Física; Professor de Educação Física.