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USE OF TECHNOLOGICAL RESOURCES TO SERVE THE PHYSICAL EDUCATION PROFESSIONAL; ONLINE CONSULTING

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Alberto Domingos da Silva Júnior, Diego Vinícius Duarte Cavalcante, Josenaldo Lopes Dias, Maria Eduarda Cavalcante Félix and Taís Feitosa da Silva

ABSTRACT

In the last decade, technological advancement has significantly transformed people's lives, especially with the popularization of mobile devices and the expansion of high-speed internet. This evolution has facilitated access to information, services and entertainment, as well as promoting global connectivity through social networks. In the health area, devices and applications have emerged that monitor health and encourage healthy habits, during the COVID-19 pandemic, the need for remote physical exercises has increased, boosting the practice of online consulting in physical education, offering flexibility, personalization, and constant support. This method has become popular, providing advantages such as saving time and money and access to specialized professionals from anywhere, preparing students for the digital world and promoting a healthy lifestyle. The narrative review carried out on the evolution and adaptation of online consulting highlighted its expansion during the pandemic, with an analysis of scientific articles, books and magazines, identifying patterns and gaps in the literature, using the descriptors: "online training", "exercise and technology", "online consulting", "online personal trainer", "personal online" and "physical education consulting", with articles from the last 10 years, Priority was given to original articles, of 38 studies, 13 were selected after analysis of content efficiency, including articles in English. With this, the studies presented the fact that technology has facilitated access to information and services, transforming communication and physical education through wearable devices, fitness apps, VR, AR, and gamification. However, adapting clients and maintaining motivation are still challenges, and more research is needed to maximize the potential of online consulting.

Keywords: Technological Advancement. Online Consulting in Physical Education. COVID-19 Pandemic. Healthy Lifestyle.

INTRODUCTION

The transformation of technology in recent years has had a significant impact on the lives of many people, as there has been a rapid technological advancement driven by innovations in devices, software, and connectivity that has transformed the way we live, work, and communicate. One of the main changes has been the increase in accessibility to technology, and in this sense, devices such as smartphones, tablets, and laptops have become ubiquitous, allowing people to have easy access to information, services, and entertainment anywhere and at any time (Moraes, 2014).

The issue of connectivity has also become increasingly important, with the evolution of high-speed internet and the expansion of WiFi wireless networks, people can easily connect with each other and with the whole world, this was the impetus for the emergence of social networks, enabling the rapid sharing of information and contact with people from different parts of the planet (Andrade, 2014).

Technology has also played an important role in healthcare, with the emergence of devices and apps that monitor health and encourage a healthy lifestyle. Within this logic, a new trend, however, has gained strength: the online Personal Trainer, that is, a virtual consultant for personalized training, this consulting service takes place by email, Google Meet, Facebook, Instagram or WhatsApp, being financially more advantageous than having a Physical Education professional available during training. Not all students, however, are adapted to a distance orientation (Andrade, 2014).

Within physical education, there are several technological resources that can be used to improve teaching and the practices involved there, some of the most common resources include wearable devices, fitness applications, virtual reality (VR) and augmented reality (AR), gamification, online teaching platforms (Online consulting) (Araújo, 2022).

Therefore, the need to practice exercises in remote environments during the pandemic emerged as a consequence of the restrictions imposed to control the expansion and spread of the virus, physical training occurs through a periodization of exercises and physical activities in an organized and systemic way, for the progression of morphological and functional aspects, generating organic adaptations in the motor demand for the execution of work, whether these are sports or not (Isler, 2015).

With the closure of gyms, parks, and other public spaces, and the recommendation of social distancing, many people were prevented from continuing with their daily exercise routines, in addition, social isolation and quarantine measures also had a significant impact on people's mental health, leading to increased stress, anxiety, and other similar issues,

physical exercise is known for its mental health benefits, such as reducing stress and increasing levels of well-being and self-esteem (Lifeng, 2023).

Given this scenario, the practice of exercises in remote environments has become an accessible alternative for people to continue exercising during the pandemic, technology played a fundamental role in this process, since it allows access to online classes, personalized training, fitness apps as mentioned above, exercise videos, among other resources, according to (Oliveira, 2014).

Online consulting in physical education is a service provided by professionals in the area who offer guidance, training and remote support for people who want to improve their health, physical conditioning and sports performance, citing this method for being one of the most comprehensive methods to which the physical education professional makes contact with his students collectively or individually, varying the modality (Kurylo , 2016).

In this method of consulting, interactions between the physical education professional and the client occur mainly through online platforms such as video calls, email, text messages, or specific applications (Kurylo, 2016). Through these tools, it is possible to perform physical assessments, prescribe personalized workouts, provide nutritional guidance, and answer questions about exercises and techniques performed (Kurylo, 2016).

Online consulting in physical education offers several advantages to the terms of prescription, such as flexible schedules, customization of training according to the specific needs and objectives of the client, the possibility of training at home or anywhere, saving time and money with travel and the availability of constant supervision and motivation by the professional, this type of consulting has become more common and popular, especially during the COVID-19 pandemic, when many people are looking for new ways to stay active and healthy at home (Silva et al., 2022).

The study of the advancement of technology and online consulting in the last decade is of paramount importance today for several reasons, one of them being access to up-to-date resources and information: technology is constantly evolving and offers a variety of resources, applications and online platforms that can enrich Physical Education classes, these resources can provide up-to-date information on exercises, sports techniques, nutrition, among other relevant topics, also, the improvement of teaching and learning: through technology, Physical Education teachers have the opportunity to develop more efficient teaching methods (Da Silva Miranda, 2020).

The use of applications, software, and online platforms can help engage students, making classes more interactive and dynamic (Moraes, 2014). Additionally, online consulting can provide individualized support, assisting students in developing specific

skills. An important attribute in the research to which it also adds positively to society is the promotion of a healthy lifestyle, since technological tools can help students track their progress, set goals and maintain a healthy lifestyle, for example, activity tracking devices and fitness apps can encourage students to exercise regularly and monitor their performance (Kurylo, 2016).

Online consulting allows students to have access to coaches and Physical Education specialists from anywhere in the world. This can be especially helpful for those who live in remote areas or do not have access to adequate physical resources, online trainers can offer personalized guidance, prescribe specific exercises, and track students' progress (Kurylo, 2016).

The adoption of healthy habits can then provide people with better conditions to face the current daily life, very hectic and full of stressful stimuli, so the monitoring of a good professional to guide, monitor and motivate them is very important, so as not to let them give up before achieving their goals, it also promotes preparation for the digital world, technology and online consulting are increasingly present in today's world by introducing students to the use of these tools in Physical Education, we are preparing them to face the challenges and opportunities of the digital world in their future personal and professional lives (Vicentini et al., 2018).

In summary, the study of the advancement of technology and online consulting in the last decade is important to improve teaching and learning, promote a healthy lifestyle, and prepare students for the demands of the digital world (Vicentini et al., 2018). Therefore, the present study aims to analyze, through research, the large-scale advancement of online consulting and its expansion during the last decade, including during the period of the COVID-19 pandemic.

METHODS

A narrative review was carried out on the topic of online consulting and how it has evolved, influenced, and adapted during the last decades and had a great expansion in the pandemic. Narrative review articles are broad publications, appropriate to describe and discuss the development or "state of the art" of a given subject, from a theoretical or contextual point of view. The narrative reviews do not inform the sources of information used, the methodology for searching for references, or the criteria used in the evaluation and selection of the works. They basically consist of the analysis of the literature published in books, printed and/or electronic magazine articles in the interpretation and personal critical analysis of the author (ROTHER, 2007). The focus was on identifying and analyzing

the contents of scientific articles that specifically address online consulting and its impact on the provision of consulting services in the last decade and in the context of the pandemic.

As well as a systematic survey of the available scientific literature on the subject of online consulting and online consulting in the pandemic. Reliable academic databases, such as Google Scholar, SciELO, are used to identify relevant scientific articles and recent publications. A process of careful selection of the articles found, taking into account the relevance of the content, the date of publication and the reliability of the sources, articles that address both online consulting in general and those that specifically analyze its application and evolution during the pandemic were carried out.

In the inclusion and exclusion criteria, 38 articles were initially found on the researched platforms. However, 19 of them were literature reviews (priority was given to original articles), 3 presented only abstracts, and another 3, after reading, did not contribute significantly to the study. The descriptors "online training", "exercise and technology", "online consulting", "online personal trainer", "personal online" and "physical education consulting" were used. Articles in other languages were also included, using the Boolean operator "and" to increase the accuracy of searches.

A detailed analysis of the contents of the selected articles was carried out in order to identify the main themes and concepts addressed, such as the effectiveness of online consulting to physical education professionals, the tools and platforms used, the challenges faced regarding the applications of training and instructions, the advantages and limitations, among other relevant aspects.

The collected data were organized into thematic categories in order to facilitate the understanding of the results and identify possible patterns or trends present in the literature. Content analysis methodologies were used to identify recurring keywords, define categories and establish relationships between the different studies analyzed.

The different selected studies were compared, gaps in the literature were highlighted and recommendations for future research were made. And with interpretation of the results linked to the context of evolution in the last decade, in the pandemic and its challenges regarding the bachelor's degree in physical education. The report is structured in a clear and objective way, respecting the academic standards of formatting and citation.

And finally, a thorough review of the final report, where the consistency of the document, the grammatical correctness and ensuring that all the objectives of the research have been satisfactorily achieved.

RESULTS AND DISCUSSIONS

The results of this study show that the accessibility and ubiquity of technology has significantly facilitated access to information, services and entertainment, the increased use of mobile devices such as smartphones, tablets and laptops, along with the expansion of high-speed internet and wireless networks, has provided unprecedented global connectivity, this connectivity has been fundamental for the expansion of social networks, that have transformed the way we communicate and share information, allowing for fast and effective communication, connecting people from different parts of the world, and facilitating the sharing of information almost instantaneously (Moraes, 2014).

In healthcare, technology has also played a crucial role, especially with the emergence of devices and apps that monitor health and encourage a healthy lifestyle, including an emerging trend that would be that of the online Personal Trainer (online consulting), which offers a cost-effective and accessible alternative to face-to-face training, however, not all learners easily adapt to distance guidance, highlighting the need for personalized approaches (Andrade, 2014).

In the field of physical education, several technological resources have been used to improve teaching and the practices involved. Wearable devices, fitness apps, virtual reality (VR), augmented reality (AR), gamification, and online teaching platforms are some of the most common examples, these resources have shown effectiveness in making classes more interactive and dynamic, engaging students in a more meaningful way (Isler, 2015).

The COVID-19 pandemic brought unique challenges, especially with the closure of gyms and public spaces, which boosted the practice of physical exercises remotely, technology made it possible to access online classes, personalized training, and fitness apps, allowing people to maintain their exercise routines, in addition to the physical benefits, exercise also played an important role in mental health, helping to reduce stress and improve well-being during social isolation (Sateles, 2023).

Online physical education consulting emerged as a viable solution during the pandemic, offering flexible schedules, personalization of training and saving time and money with travel, interactions between physical education professionals and clients occur mainly through online platforms, such as video calls, email and messaging apps, allowing physical evaluations to be carried out, prescription of personalized training and nutritional guidance, the analysis of technological accessibility reveals that the ease of access to mobile devices and high-speed internet has transformed daily life, facilitating access to information and services, the global connectivity provided by social networks has both positive effects and the rapid dissemination of information (Silva et al. 2022). The following

is the table in which all the scientific studies are presented, which address various elements of the theme and their respective specific details of approaches, offering a comprehensive view of the research carried out, its different aspects such as objectives, modalities presented and tools used.

Table 1. Demonstration of scientific articles and details.

AUTHOR/YEAR	OBJECTIVE	DENOUEMENT
Andrade, 2014	Discussing the growing trend of using the Online Personal Trainer compared to the traditional Personal Trainer (face-to-face), however, highlights that not all students are prepared for this orientation.	• Target audience: people interested in improving their fitness and health, health professionals, bodybuilders and sports training practitioners. • Modality: Conventional bodybuilding and sports training. • Tools: Interview conducted with physical education professionals (personal trainer and sports coaches) published in the magazine "Viva Bem".
Moraes, 2014	To analyze how the use of state-of-the-art mobile phones and instant mobile communication applications, such as WhatsApp and Facebook Messenger, are changing the relationship with physical space and sociability. The article seeks to highlight how mobile technologies promote new experiences with the territory and with people, allowing users to be physically present in an environment, but feel involved in a virtual space.	• Target audience: researchers and academics interested in mobile technologies, instant communication and their influences on everyday life. Professionals in the field of communication, sociology, anthropology and technology interested in understanding the transformations in social relations mediated by mobile devices. • Tools: Analysis of instant mobile communication apps, such as WhatsApp and Facebook Messenger, to understand how these tools are changing social interactions. Dialogue with several authors to explore the relationships between mobile communication and physical space, highlighting the changes in the forms of conviviality and sociability.
Oliveira, 2014	Verify the factors that lead students to retain the service of the hired personal trainer by analyzing their opinion.	• Target Audience: Personalized training students between the ages of 25 and 53, attended by a personal trainer for at least a year or more. • Modality: personalized training with a personal trainer. • Tool: interviews and questionnaires with 25 students from academies in different neighborhoods of Porto Alegre.
Isler, 2015	The study seeks to understand the relationship between (online) trainers and students of personalized training, the complexity and details of these relationships mediated by technology, comparing them with the relationships established in the face-to-face context.	• Target audience: This consists of physical education professionals, especially those who work or are interested in acting as personalized trainers online, as well as the customers of these services. The survey included seven online personalized trainers and eight clients, offering insights into their perceptions and experiences in the context of online personalized training. • Tools: Google Docs, Whatsapp and Facebook for data collection.
Kurylo, 2016	It seeks to understand the specificity of the object of online consulting work, a field of action that is linked to physical education professionals who already work with personalized training.	• Target audience: bachelor's degree in physical education, health professionals and technology. • Tools: remote contact with a physical education professional by remote means being the subject of the research, along with a bibliographic analysis, then a semi-structured questionnaire where the interviewee can answer spontaneously, being qualitative and composed of 23 questions.
Vicentini et al., 2018	To analyze the acceptance and perspectives of potential	• Target audience: The potential consumers of Online Personal Trainer services in the State of São Paulo

	consumers in the State of São Paulo in relation to the Online Personal Trainer (PTO) service. The survey seeks to understand what consumers expect from this service, considering the growing demand for individualized distance training.	were the focus of the research, aiming to understand the perspectives of this group in relation to online physical training. • Modality: The study agrees on the Personal Trainer Online (PTO) modality, which consists of offering individualized physical training services at a distance, through digital platforms. • Tool: online questionnaire prepared on the Google Forms platform published by Facebook. This tool allowed us to reach a sample of 172 participants from the State of São Paulo.
Da Silva Miranda, 2020	To assess the health status and quality of life of women practicing different training and fitness modalities, both face-to-face and online, using a closed SF-36 questionnaire.	• Target audience: Health professionals, individuals of all ages, bodybuilders and/or sports training, etc. • Modality: conventional bodybuilding, personalized training. • Tool: SF-36 questionnaire for more detailed analysis.
Miguel, 2020	Show the financial impacts generated by the pandemic in a small population group of physical education professionals from personalized training.	• Target audience: Physical education teachers in the field of personal trainer. Modality: Personalized online training. Tool: Quiz in Google Forms.
Araújo, 2022	It provides a reflection on the pedagogical implications of teaching Physical Education during the COVID-19 pandemic. The thematic dossier seeks to explore how PE teachers are dealing with the challenges of social distancing and remote teaching, as well as to present strategies, technologies, and new learnings to adapt PE teaching in times of crisis.	• Target audience: Physical Education teachers, Physical Education students and researchers in the field of Physical Education. • Modality: Conventional bodybuilding and functional training during the COVID-19 pandemic. • Tools: digital technologies for remote teaching, such as online platforms, social media, and virtual communication tools.
Silva, et al. / 2022	The objective of this article is to investigate the experiences lived in the Life in Motion Project (VEM) during the period from January to	• Target audience: individuals who are isolated and inactive, requiring guided physical activities during the COVID-19 pandemic.
	December 2021, narrating these experiences through an experience report, as a focus, analyzing the remote physical exercise offered by the project during the COVID-19 pandemic.	• Modalities: The project offered Pilates, Stretching, Functional Gymnastics, Circuit and Rhythms activities to meet the physical exercise needs of the target audience. • Tools: The activities were transmitted remotely through the Zoom Meeting platform, allowing participants to take classes online.
Lifeng / 2023	The objective is to investigate in the year 2023 about sports training at home and its effect on the health of university students.	• Target audience: physical education professionals, university students and health professionals in general. • Modality: home-training with an experimental group that received online monitoring from physical education professionals. • Tools: questionnaire to assess the aspects and situation of sports training at home and a face-to-face physical fitness test (TAF) before and after the training period (comparison of data in Excel and SPSS for statistical analyses).
Sateles / 2023	Address the services that a personal trainer can provide, whether through online distance or face-to-face consulting with your student and how this	• Target audience: physical exercise practitioners interested in having professional monitoring, Physical Education students and Personal trainers who seek to adapt their practices after the pandemic, people who want to evolve their health, well-being and physical fitness.

	practice has evolved after the SARS-Cov-2 pandemic.	• Modality: physical training (general) • Tools: online consulting, recorded remote classes, sending worksheets, emails and video calls,

In addition to the articles selected in the table, it is noteworthy that the year most represented in the research sources is 2014, a period marked by the significant increase in studies on personalized online training, these articles provided an important basis for understanding the practices and methodologies of online consulting, especially in the context of physical training. The evolution of online consulting, especially after the COVID-19 pandemic, showed an exponential growth in the use of digital technologies, a curiosity while reading was the change in the term "personalized online training" seen more in articles between 2015 and earlier, between 2016 onwards the most used nomenclature was "online consulting" where after 2019 it only became more popular due to its greater need during the pandemic. Social isolation restrictions have driven the adaptation and innovation of consulting practices, with health and physical education professionals adopting new tools and platforms to continue offering their services remotely.

The target audience most frequently addressed in these studies includes a wide age range, from young adults of 19 years to seniors of 60 years. Among these groups are people who became more active during the pandemic, individuals who faced periods of isolation, sedentary people looking to start physical activities, as well as health professionals and specifically physical education. The tools used to produce these studies varied, with a particular emphasis on the use of social networks, video call apps, email, and online questionnaires. These technologies have not only enabled the continuity of consulting services, but have also made it possible to collect data and conduct comprehensive studies on the impact and effectiveness of online consulting in different contexts and populations.

In health, the adoption of the online Personal Trainer offers advantages such as accessibility and personalization of training, however, the adaptation of students to distance guidance presents challenges, highlighting the importance of adaptive approaches and continuous support, these technological resources in physical education, such as wearable devices and fitness apps, have proven effective in improving teaching, technologies such as VR and AR, as well as gamification, increase student engagement, making classes more interactive and dynamic (Miguel, 2020).

During the pandemic according to Silva et al. (2022), the practice of remote exercises became crucial not only for physical health, but also for mental health, technology facilitated the continuity of physical activities, evidencing the importance of adapting to new exercise modalities, with this, online consulting in physical education proved to be efficient

in prescribing training and nutritional guidance, Offering several advantages such as flexibility and personalization, as mentioned above, however, challenges such as customer adaptation and maintaining continuous motivation still need to be addressed.

In the future, online consulting is expected to continue to evolve and expand, even after the pandemic, due to its advantages and growing familiarity with digital tools, the digital preparation provided by technology in physical education prepares students to face the challenges and opportunities of the digital world in their personal and professional lives.

However, there is a growing need for more research to explore various facets of this modality, suggestions for new studies include: the effectiveness of online versus face-to-face consulting, the investigation of the technologies and platforms used, the financial impact of online consulting for physical education professionals, customer engagement and adherence, the impact on customer health and well-being, the profile of online consulting clients, the economic analysis of costs and benefits for clients, and the specific training needs for physical education professionals who act as online consultants.

These studies can provide a robust foundation for better understanding the role and potential of online consulting in physical education, allowing professionals and academics to enhance their market practices and strategies.

CONCLUSION

The present study highlights the importance of technological advancement and online consulting in physical education, both for teaching and learning and for the promotion of a healthy lifestyle, technology offers valuable tools that can enrich educational and health practices, preparing individuals for the demands of the digital world. Future research should further explore the potential of these technologies to continue to improve physical education and public health.

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