Use of technologies for the creation of new hybrid services based on physical exercise to improve workers health: a case study

Uso de tecnologías para la creación de nuevos servicios híbridos, basados en ejercicio físico, para mejorar la salud de los trabajadores: un estudio de caso

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Abstract

The COVID-19 pandemic brought teleworking into the spotlight due to the limitations for containing the spread of the virus, while compulsory confinement increased the proportion of sedentary or obese workers, and work-related stress or anxiety. To mitigate these effects, workers should, among other things, engage in physical exercise and take care of their nutrition, and it is the responsibility of companies to facilitate this to their employees. The aim of this study is to analyse the impact on physical health and well-being of a new hybrid pilot service (face-to-face-online) in a sports centre, evaluating its effectiveness. The methodology used was quantitative, using validated measurement tools such as the short IPAQ version, SF36, electrical bioimpedance, dynamometer, VO2 max, or abdominal waist. The sample *n* = 44 members who completed the programme, 45.5% were men and 54.5% women. Data were analysed using SPSS v28. The results show that the proposed hybrid programme works, as it optimised physical activity patterns and metabolic expenditure, as well as all physical and anthropometric variables, which experienced statistically significant improvements. The hybrid programme has been effective, achieving improvements in all the variables analysed and demonstrating the advantages it offers to clients, nutritionists, trainers and the company. These new hybrid

Resumen

La pandemia de la COVID-19 puso en relevancia el teletrabajo debido a las limitaciones para contención de la propagación del virus, mientras que el confinamiento obligatorio incrementó la proporción de trabajadores sedentarios o con obesidad, y con problemas de estrés o ansiedad laboral. Para mitigar estos efectos los trabajadores deberían, entre otros, practicar ejercicio físico y cuidar su nutrición, teniendo las empresas la responsabilidad de facilitarles esto. El objetivo de este estudio es analizar el impacto sobre la salud física y el bienestar de un nuevo servicio piloto híbrido (presencial-online), en un centro deportivo, evaluándose su efectividad. La metodología utilizada ha sido cuantitativa, mediante el uso de herramientas validadas de medición como el IPAQ reducido, SF36, bioimpedancia eléctrica, dinamómetro, VO2 máx., o cintura abdominal. La muestra fue *n* = 44 usuarios que completaron el programa siendo un 45.5% hombres y un 54.5% mujeres. Los datos fueron analizados con el programa SPSS v28. Los resultados muestran que el programa híbrido propuesto funciona, ya que optimizó los patrones de actividad física y el gasto metabólico, así como todas las variables físicas y antropométricas, las cuales experimentaron mejoras estadísticamente significativas. El programa híbrido ha resultado eficaz, consiguiendo mejoras en todas las variables analizadas y demostrando las ventajas que ofrece

programmes can improve revenues in sports companies after such a difficult period as the pandemic and post-pandemic. Moreover, such hybrid services can help to improve the physical, mental and social well-being of workers. In practical terms, the new hybrid service is an interesting service to be commercialised with a high chance of success.

Keywords: Health, sedentarism, teleworking, new technologies, workplace.

a clientes, nutricionistas, entrenadores y empresa. Estos nuevos programas híbridos pueden mejorar los ingresos en empresas deportivas después de un período tan difícil como la pandemia y post-pandemia. Además, este tipo de servicios híbridos pueden ayudar a mejorar el bienestar físico, mental y emocional de los trabajadores. En términos prácticos, el nuevo servicio híbrido se constituye como un servicio interesante para ser comercializado y con muchas posibilidades de éxito.

Palabras clave: Salud, sedentarismo, teletrabajo, nuevas tecnologías, lugar de trabajo.

Introduction

The COVID-19 pandemic has had a significant negative impact on the lives and well-being of workers worldwide (Al-Jubari, 2022; Shreffler, 2020). The most immediate effects included unemployment and income loss (Kaur et al., 2022). Moreover, workers who managed to retain their jobs were forced to adapt to new working modalities, such as remote or hybrid work, without prior preparation, potentially leading to negative consequences (Weber, 2023).

Psychologically, the pandemic has caused considerable uncertainty, stress, and anxiety among workers (Giorgi et al., 2020). According to the aforementioned study, job insecurity, the lack of social contact, and the situation of uncertainty have negatively affected the mental well-being of many workers. Furthermore, numerous studies have indicated an increase in sedentary behavior and a decrease in physical activity levels, which also led to higher rates of overweight and obesity (Booth et al., 2017; Lippi et al., 2019).

In this new context, telework can be defined as the exercise of a professional occupation performed remotely, in a place different from the company or organization's work center, and carried out using telecommunication and computer technologies (Belzunegui-Eraso et al., 2013). Although originated in the 1970s, it has been influenced in recent decades by various technological, individual, and organizational factors. The historical process has also impacted both the increase in this work modality in a short period and the issues concerning its conceptualization, understanding, and application (Belzunegui-Eraso & Erro-Garcés, 2020). Particularly, during the crisis caused by the coronavirus (COVID-19) disease, telework increased exponentially from the year 2020 following the recommendations and protocols that governments implemented to curb the spread of the disease (Blahopoulou et al., 2022).

On the other hand, regular and continuous physical activity is associated with a reduction in mortality rates by producing, among other, physical, mental, and social benefits, improvements in cardiovascular and respiratory functions, reducing blood pressure, diabetes, enhancing glucose tolerance, and certain types of cancer (Kesaniemi et al., 2001; Luepker et al., 1996).

However, during the abrupt transition to telework self-imposed by the lockdowns due to the COVID-19 pandemic, several stressors emerged. Among the most common were childcare in families, fear of dismissal, time management, and anxiety over increased productivity, preventing not everyone from managing their available time and anticipating the physical activities they wished to undertake (Shipman et al., 2023).

In this context, the available official data showed concerning figures about the regular and continued practice of physical activity both in the European Union (EU) and Spain. Specifically, the latest Eurobarometer published warned of a five-point increase in the number of Spaniards who never engage in vigorous physical activity compared to EU data, and three points compared to those who never engage in moderate physical activity. From a gender perspective, both in Spain and Europe, 65% of women do not engage in physical activity, compared to 51% in the EU and 57% of Spanish men, with lack of time being the main barrier to practice in Spain at 46%, compared to 41% in the EU (European Commission, 2022). Moreover, depending on social class, there are those who cannot incorporate regular and continued physical activity practice over other work-related or family responsibilities, especially women (Mateu & Rodrigues Marques, 2020; Puig, 2020).

This fact has had enormous consequences on physical and mental health. According to the first report from the Observatory of Active Life and Health, in Spain, there are 52,000 deaths due to physical inactivity per year (Mayo et al., 2017), when it does not bring overweight, obesity, or other metabolic nature diseases, whose prevalence in Spain already exceeds 61% (OECD, 2019). Recent research indicates that, in the long term, having suffered from COVID-19 entails in older adults, especially in women, a higher prevalence in the appearance of overweight/obesity and metabolic syndrome associated with a higher risk of depression (Shyam et al., 2023). Given that the number of COVID-19 deaths in Spain, from

March 2020 to the end of 2022, exceeded 100,000 deaths, with a total of 51,078 in 2020 (Macarrón Larumbe & Leguina Herrán, 2023), physical inactivity has emerged as a risk factor that has experienced steady growth in recent years, affecting people's health and quality of life.

In this regard, since the COVID-19 pandemic, to combat the physical inactivity caused by mandatory lockdowns, emerged a need for the population to engage in physical activity (Hammami et al., 2020). Thus, digitalization became the solution and alternative for people and sports organizations to stay active. Since 2020, technologies related to fitness and health have grown exponentially. For example, during the lockdown period, channels that promote online physical activity increased through different types of platforms such as YouTube or Zoom, allowing real-time interaction between the instructor and participants, where different activities like cross fit, yoga, or dance activities could be performed (Ng, 2020; Nyenhuis et al., 2020).

In recent years, social platforms have changed the way we understand our daily lives and consume products and services (Kim, 2022). Since the lockdown, many people have used technologies to exercise either through applications or videos, thanks to the increase in digital channels that encourage online physical activity (Chen et al., 2020; Nyenhuis et al., 2020). This phenomenon of digitalization, led by social networks, has resulted in an increase in their number of users who can no longer conceive their life without the daily use of digital platforms (Dey et al., 2020).

This fact leads current users to prefer consuming content in a digital environment whenever, wherever, and however they want (Dey et al., 2020). Thus, digital platforms have proven to be a viable alternative to traditional training methods, equally valid for staying fit and practicing physical activity (McDonoug et al., 2021).

Therefore, in the post-COVID era, we find ourselves in a situation where the life and well-being of workers are damaged by increased stress, job anxiety, decreased physical and mental well-being, difficulties in reconciling work and personal life, also generating greater risks of social isolation and loneliness. To mitigate these effects, workers should, among other things, engage in regular physical exercise, take care of their nutrition by following a healthy diet, get enough sleep, and disconnect and socialize. Companies, for their part, have the responsibility to facilitate these means to their work teams.

The aim of this study is to analyze the impact on physical and psychological health of workers, members of a health club, through a pilot test of a new hybrid service (face-to-face and online), adapted to the new post-COVID 19 environment, in a sports center, through digitalisation. In this sense, its success was studied through the analysis of results, to determine a future implementation in the O2 Centro Wellness chain, once this initial test has been overcome.

Materials and Methods

Design

A pre-experimental pre-post study with a single group that voluntarily participated in a three-month hybrid exercise program was designed. Participants voluntarily enrolled in the exercise program offered by O2 Wellness Centers in Spain. The selection criteria for participants were being in an active employment situation and being a sedentary person or with overweight or obesity.

Participants

The sample consisted of 44 users who completed the full program with both evaluations. The initial sample was 134 people; however, only 44 subjects completed all the tests and the full program. 45.5% were men and 54.5% women. Due to the confidentiality of personal data by the participating members, only their gender could be disclosed.

Instruments

To measure the results of the program, different tools previously validated in the scientific literature were used. The reduced International Physical Activity Questionnaire (IPAQ) was used to measure physical activity level, which has shown adequate psychometric properties (Brown et al., 2004).

The measurement of weight, BMI (Body Mass Index), body fat percentage, and muscle mass was made through Bioelectrical Impedance Analysis (BIA) technology used by TANITA, an internationally recognized method for measuring body composition (Ward, 2019). Additionally, using a fitness application connected allows the user, trainer, and nutritionist to objectively track the client's progress. The method to measure abdominal waist is a simple and quick method used to assess the risk of chronic diseases associated with abdominal obesity and has been widely used (Fang et al., 2013). For measuring cardiovascular fitness and exercise response, VO2 max on a treadmill was used; the measurement was made through indirect VO2 test, an exercise test used to measure maximum oxygen consumption (VO2 max.), measuring aerobic capacity. The test is based on the measurement of oxygen consumption (VO2) and carbon dioxide (CO2) production during exercise. The validity of the indirect VO2 test has been demonstrated in studies comparing the test results with the direct

VO2 test results, which is a more precise but also more invasive test. Overall, studies have found that the indirect VO2 test is a valid measure of VO2 max (Garber et al., 2011).

Regarding strength, researchers have used a dynamometer as it is a validated instrument that measures muscle strength, having been used in numerous contexts, including research, clinical practice, and sports. The scientific validity of measurement with a dynamometer has been assessed in numerous studies, proving it to be a valid instrument for measuring muscle strength (Stark et al., 2011).

Finally, to measure the program's impact on the participants' quality of life, the SF-36, a generic health questionnaire that measures eight dimensions of health-related quality of life such as physical functioning, role-physical, pain, social functioning, role-emotional, mental health, vitality, and energy was used. This 36-question questionnaire has demonstrated good content validity, criterion validity, concurrent validity, and construct validity (Ware et al., 2000).

Procedure

"My Ideal Weight" Program

Throughout the COVID-19 pandemic, certain restrictions were maintained in Spain until the end of 2021, complicating the return to normalcy. In this adverse context, with declines of up to 64% in Fitness business billing due to the pandemic (Europe Active & Deloitte, 2021), an exponential increase in teleworking, and a general worsening of physical activity, sedentary lifestyle, and overweight. The management team of the O2 Wellness Center chain took measures to address the situation by creating a new service that responded to the new needs of the population, leveraging new technologies to develop a new hybrid service: the "My Ideal Weight" program.

The goal of this process was to develop a new service that would meet the needs of worker clients. For this, a test of operation of a new hybrid service (face-to-face or online) applying the use of new emerging technologies during the pandemic was conducted to respond to workers´ needs who had increased their sedentary lifestyle and overweight. The creation of this new service can be divided into six phases according to its objectives.

1. Analysis phase (January 16 to February 11, 2021). An analysis of the initial situation of potential clients and their needs, available resources, and potential risks of the service for the company was performed. The analysis showed that the main needs of potential clients were lack of time and difficulty in traveling to the sports center. These, in turn, were the greatest potential risks because clients might leave the service due to time and travel difficulties.

2. Design and preparation phase (February 12 to April 6, 2021). The program design focused on promoting healthy challenges, using new technologies that could overcome the aforementioned risks, achieving healthy results in 12 weeks. For this, an individual customization of the program for each client, training in the use of new technologies, planning of human and marketing resources, search for sponsors, establishing a gamification program with rewards, and an initial assessment of the program estimated at €300 per client were conducted. The program introduced new technologies such as a training APP, Vimeo video on-demand platform, Microsoft Teams video calling platform, Tanita for biometric measurement, and Google Forms for the survey.

3. Program execution phase (April 7 to August 31, 2021). During this phase, client acquisition was carried out through different marketing campaigns, initial program interviews and tests were conducted, as well as the monitoring of the exercise program and healthy challenges. This phase could be divided into three stages:

a) Program start: initial interview with a personal trainer and nutritionist with initial measurements, tests, and surveys to, based on the physical condition of the client and their personal circumstances, establish a healthy weight loss goal. Subsequently, prescription of the hybrid training program in the club's training app including programs in the club, outdoors, or at home, including access and workouts on the chain's on-demand video platform.

b) Exercise control and monitoring: the program begins with three personal training sessions, at the club or via video call, to teach and educate the client on how to train at the club, outdoors, or at home. During the 12 weeks, the client had to visit the center at least once every 14 days to perform the corresponding measurements, as well as a follow-up interview with the trainer. This interview was done face-to-face or via video call depending on the client's needs. On the other hand, the client had to have video call interviews with their nutritionist every two weeks, through 15-minute sessions in which their progress was evaluated and their diet updated.

c) End of the program: final interview with the trainer to carry out the final measurements, analyze their evolution, surveys, and a final before-and-after photo. Likewise, a video call with the nutritionist to conduct a final evaluation between both.

4. Evaluation phase (from September 1, 2021, to December 31, 2021). At the end, satisfaction surveys with the service and the program were conducted with all participants, and a coordination meeting with the participating teams was held to evaluate the program.

5. Results validation phase (from March 5, 2022). Planning of meetings with researchers from different universities to design the work plan to be developed according to the results obtained. In addition, the validation of the program's results and its possible dissemination through the empirical validation of the program and its results were also conducted.

6. Service commercialization phase (January 1, 2024). Finally, the commercialization of the service based on the results obtained from this pilot test was scheduled.

Statistical Analysis

The data were analyzed with the statistical program SPSS v28. Descriptive statistics for quantitative variables (mean and standard deviation) and qualitative variables (frequency and percentage) were calculated. Given the small number of participants, less than 50, non-parametric statistics were used to analyze the results, considering the related samples the Wilcoxon T-test was used. The effect size was considered according to the criteria and indicators set out by Domínguez-Lara (2018). The significance level was set at a *p*-value < 0.05.

Results

Table 1 shows how the hybrid program and the introduction of digitalization in the users' lives improved their physical activity patterns and metabolic expenditure after the exercise program compared to the previous phase. It is important to note that there were statistically significant differences ($p < .05$) in walking time and its associated metabolic expenditure being higher in the later phase, while sitting time was reduced by almost one hour.

Table 1
Variation in levels of physical activity and metabolic expenditure by phase

Variables	Pre test		Post-test		*Z*	*p*	r_{bis}
	M	*SD*	*M*	*SD*			
Frequency of Vigorous Physical Activity (days/week)	3.59	1.4	3.73	1.3	- .48	.629	- .09
Time Vigorous Physical Activity (minutes)	68.52	25.4	69.26	32.1	- .07	.944	- .01
Frequency of Moderate Physical Activity (days/week)	3.09	1.5	3.41	1.7	-1.03	.303	- .20
Time Moderate Physical Activity (minutes)	49.77	32.5	43.86	30.3	- .90	.366	.19
Frequency Walking (days/week)	5.05	2.0	5.57	1.7	- 1.73	.083	- .41
Walking Time (minutes)	37.19	24.6	45.06	29.6	- 2.06	.039*	- .42
Sitting Time (hours)	6.12	2.9	5.32	2.6	- 2.77	.006**	.61
Moderate Physical Activity (MET/min/week)	2,063.18	1,235.8	2,155.45	1,420.1	- .87	.931	- .02
Moderate physical activity (MET/min/week)	679.09	589.6	588.63	451.4	- .28	.778	.05
Physical activity walking (MET/min/week)	686.10	551.0	916.50	726.7	- 2.27	.023*	- .44
Total physical activity (MET/min/week)	3,428.37	1827.8	3,660.59	1869.5	- .70	.484	- .12

Note: * *M* = Mean; *SD* = Standard Desviation; $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; r_{bis}: biserial correlation; 0.10 = small effect, 0.30 = medium

Regarding the effect shown by the mean difference between the initial and final evaluation phase, the reduction in sitting time had a significant effect on the users' health. On the other hand, walking time, its metabolic expenditure, and frequency, although showing a high trend towards significance, had a moderate significant effect on the levels of physical activity and health. Finally, it is also important to highlight that other variables, although not showing statistically significant differences, did have a small effect on the mean difference, such as the frequency and time of moderate physical activity, or the total metabolic expenditure.

The results regarding the variation of physical and anthropometric variables of users before and after the physical intervention using digital tools are indicated in Table 2. The results were very satisfactory, with all variables improving statistically significantly ($p < .05$) except for muscle ratio, which showed a high tendency towards significance. All indicators for the variables were reduced, while physical endurance and strength capabilities increased. All variables, including the percentage of muscle mass, had significant effects on the difference in final values compared to the initial ones. All variables showed large effects except for muscle mass and dynamometry, which had high moderate effects.

Table 2
Results of Anthropometric and Physical Variables

Variable	Pre test		Post-test		*Z*	*p*	r_{bis}
	M	*SD*	*M*	*SD*			
Weight (kg)	86.01	16.0	80.84	15.1	- 5.59	.001***	.97
VO2 max (ml/kg/min)	35.31	9.0	39.30	8.7	- 4.74	.001***	-.82
Girth (cm)	98.38	14.8	90.91	12.5	- 5.62	.001***	.98
BMI	29.58	4.6	27.83	4.1	- 5.71	.001***	1.00
Fat percentage (%)	31.79	7.9	27.83	4.1	- 3.45	.001***	.60
Muscle	55.22	10.4	54.63	10.5	- 1.85	.065	.33
Manual dynamometry (kg)	35.24	9.6	37.52	14.1	- 2.25	.024*	.39

Note: * *M* = Mean; *SD* = Standard Desviation; $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; *rbis:* biserial correlation; 0.10 = small effect, 0.30 = medium

The results on health perceived by the users (Table 3) were very satisfactory. Physical benefits were associated with psychological and emotional benefits, as demonstrated by the results. All health-related variables improved statistically significantly at the end of the program, except for limitations in the role of physical health, which showed a high tendency towards significance. Despite this, both this variable and the rest showed a significant great effect in the final evaluations compared to the initial ones at the beginning of the program and the introduction of digital tools in their daily routine. It's important to specifically mention improvements in physical and social functions, as well as the resolution of emotional problems and better health perception.

Table 3
User-perceived health outcomes

Variable	Pre test		Post-test		*Z*	*p*	r_{bis}
	M	*SD*	*M*	*SD*			
Physical function (0-100)	91.70	10.8	96.81	5.4	- 4.05	.001***	- .90
Role limitations physical health (0-100)	93.18	19.7	96.59	12.7	- 1.90	.058	.75
Role limitations emotional problems (0-100)	78.03	37.3	92.42	21.4	- 3.00	.003**	- 1.00
Energy/fatigue (0-100)	61.36	16.9	70.00	16.0	- 3.25	.001***	- .62
Emotional well-being (0-100)	71.45	18.1	79.00	15.2	- 3.62	.001***	- .66
Social function (0-100)	81.53	25.6	92.05	17.7	- 3.31	.001***	- .73
Pain (0-100)	80.00	18.2	86.13	15.7	- 2.65	.008**	- .64
General health (0-100)	67.50	18.8	77.50	13.1	- 3.74	.001***	- .68

Note: * *M* = Mean; *SD* = Standard Desviation; $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; r_{bis}: biserial correlation; 0.10 = small effect, 0.30 = medium

Furthermore, a service evaluation survey was sent to the finalist participants, obtaining a global rating of 4.6 out of 5 for the new hybrid service, with a recommendation index of 98%. It was also intended to obtain an estimate of the price they would be willing to pay for the new service, averaging 350 euros. This is very valuable for the commercialization of the new service.

Discussion

The aim of this study was to analyze the impact on physical and psychological health through a pilot test of a new hybrid service in a sports center through digitalization. The EU in its last research indicated different worrying statistical data about the increase in non-practice of vigorous and moderate physical activity among Spaniards (European Commission, 2022). Therefore, this study responds by focusing on how a corporate wellness program through the introduction of digital tools increased the physical activity levels of inactive workers or those with obesity, improving their perception of physical and

mental health, and reducing sitting time.

For example, Harmouche-Karaki et al. (2023) indicated that workers who went to their workplace during COVID-19 practiced more physical activity and spent less time sitting, coinciding with this study. However, it seems relevant that implementing the option to perform physical activity online was another alternative for workers who carry out their functions mainly online. In this sense, this study, along with others (Ng, 2020; Nyenhuis et al., 2020), supported that conducting physical activity online with the use of digital platforms adapted to the work context of each organization was a relevant way to contribute to the improvement of physical activity practice and the health of workers, being a very good alternative to traditional training (McDonoug et al., 2021).

Secondly, this study showed statistically significant differences in all examined dimensions of the SF-36 questionnaire, such as physical function, limitations due to emotional problems, energy/fatigue, emotional well-being, social function, pain, and general health. The only exception were the limitations in the role of physical health which showed a high tendency towards significance. These results coincide with the study by Moreira et al. (2022) where, after a 17-week training program at the workplace, subjects had a good perception of quality of life, affecting a positive effect on the domains of Pain, Physical Function, Physical Performance, and Emotional Performance, substantially improving the health of workers (Holzgreve et al., 2020).

Thirdly, all physical and anthropometric variables of the workers presented statistically significant differences, except for the muscle ratio, which showed a high tendency towards significance. In another sense, the application of digital tools broke the barrier of displacement to the sports center by workers, resulting in greater daily activity that produced health benefits such as waist circumference reduction, BMI, or the increase of their aerobic capacity and strength.

These results did not coincide with the study by Apichai et al. (2020), where face-to-face training was conducted in university employees, not producing significant improvements in body weight, body mass index, fat mass, percentage of fat mass. Therefore, it is interesting and relevant to continue studying the impact of hybrid physical exercise programs with digital tools, since in this research most of its studied variables show significant changes.

This research is not without limitations. The main limitation was the reduced number of participants and their geographical dispersion since workers attended different centers distributed throughout Spain. Associated with this limitation, tests and physical tests were evaluated by different professionals according to the worker's location. On the other hand, due to the confidentiality of the data, only the gender of the workers could be obtained, and other comparative analyses could not be carried out or obtain more information on the workers' profile and experience with physical activity beforehand. Many subjects were lost during the follow-up since it was not possible to recover all the data from all participants. Data losses during the follow-up of a study could affect the validity of a study's results when participants who leave are different from those who do not leave. Therefore, it is important to measure all participants regardless of whether they have followed the protocol. In this sense, the analysis by intention to treat helped ensure the internal validity of the program. The data of participants who, for personal reasons, could not continue were important in the sample set because it contributed to working with greater statistical power and to represent with greater rigor the complexity of a sample to which a protocol has been administered. Furthermore, some of the results were obtained through online questionnaires, which could be replaced by totally objective measurement measures thanks to new technologies.

Conclusions

The main conclusion of this study is that the results of this pilot test of the hybrid service are very successful. The incorporation of different digital tools within the 'My Ideal Weight' program has helped to change the habits of sedentary workers or those with overweight or obesity. Workers have increased their physical activity levels, reducing their sitting time. Although there are no significant differences, the benefits at the physical and psychological level are very satisfactory. Workers have improved their physical, mental and emotional health, as well as acquired healthy habits that will improve their well-being.

Thus, the objective set out to analyze the impact on physical and psychological health through a pilot test of a new hybrid service (face-to-face and online), adapted to the new post-COVID 19 environment, in a sports center, thanks to new technologies has been achieved.

Implications for Management

The effects of the COVID-19 pandemic on workers' lives and well-being have continued beyond the health crisis. Today, workers continue to face challenges such as stress, anxiety, uncertainty and lack of work-life balance resulting in part from the explosion of teleworking and the increase in physical inactivity and overweight. Wellness programmes have shown to have a very positive impact on organisations and companies, as well as on the health and wellbeing of their employees,

therefore, knowledge of successful novel hybrid approaches of a leading company can be of great interest (Nuñez-Sánchez et al., 2022).

On the other hand, the COVID-19 pandemic has also caused significant damage in fitness centres around the world causing reductions in turnover as well as in the number of subscribers caused by the changes brought about by the pandemic.

Thanks to the use of new technologies, the researchers have proven that the hybrid programme designed in the Premium O2 Centro Wellness chain of gyms is effective, improving in practically all the variables analysed through which its improvement in integral health, well-being, strength, fat percentage, among others, has been measured. These ideas are in line with the research of Núñez-Sánchez et al. (2021) who stated that, in the future, in order to improve the health and well-being of workers, the use of hybrid programs is necessary.

Furthermore, it is worth highlighting the interest generated by the programme with appearances in different national media (CMDSport, 2021; Esdiario, 2021), corroborating the importance of the use of new technologies and the search for physical activity solutions during a remote working day (Núñez-Sánchez et al., 2021, 2022).

It can be concluded, therefore, that the new hybrid service works and can be a marketed service with a high chance of success, thus generating a transfer of knowledge by ensuring the effectiveness of the new programme designed. Furthermore, the high customer satisfaction with the programme has also been demonstrated, with a recommendation rate of 98%. According to the research team, the premium club chain is determined to build on the research to launch this new service to companies wishing to reduce sedentary behavior in their teams.

This new hybrid programme will improve not only the well-being of customers, but also that of employees and the company by improving revenues after such a difficult period as the pandemic and post-pandemic.

Ethics Committee Statement

All participants who agreed to voluntarily collaborate in this research were informed of the objectives and expressed their consent included at the beginning of the questionnaire, which also informed voluntary and anonymous participation, guaranteeing the confidentiality of the participants (in accordance with the Declaration of Helsinki).

Conflict of interests

The funding entities or institutions had no influence on the design of the study, the analysis of the data or the interpretation of the results.

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Author Contribution

Conceptualization J.N. & V.J.; Methodology S.A., J.N. & V.J. V.J. Software & Pvt.; Validation J.N., S.A., V.J. & R.G.; Formal Analysis J.N. & V.J.; Investigation J.N. & V.J.; Resources JN; Data Curation V.J. & S.A.; Writing – Original Draft J.N., S.A., V.J. & R.G.; Writing – Review & Editing J.N. & V.J.; Visualization J.N.; J.N. Supervision; Project Administration J.N. All authors have read and agree with the published version of the manuscript.

Data Availability Statement

“Data available upon request to the corresponding author [victor.jimenez@universidadeuropea.es].

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