Clinical Gyms: a step towards preventive medicine

Maria Gil Branco
152118117

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Abstract

Preventive medicine is becoming increasingly important in the health sector. In parallel, two trends are shaping the shift in the healthcare industry: chronic diseases are affecting a bigger proportion of the population, whereas the overall society is increasingly aware of the importance of physical exercise. Thus, in this dissertation, we studied the creation of a new service: a Clinical Gym. This service combines the medical and health expertise of a Doctor with the training knowledge of a sports-related professional, aiming to create a tailor-made training plan for patients, while taking into consideration any medical conditions. We gathered 735 answers to surveys directed at prospective clients, Doctors and sports-related professionals, through which we could evaluate the need, the interest and the target of this new venture. Through our analysis we concluded that exists both a need and interest in this new service, since the majority of the three parties involved recognize the advantages that Clinical Gyms can bring: 63% of the end-users, 72% of Doctors and 65% of sports related professionals, are at least very interested in attending or providing this service. Additionally, we designed a brief business plan to validate the financial viability of Clinical Gyms. Our results seem encouraging to the pursuit of this business opportunity, although the analysis shall be deepened.

Keywords: Clinical Gyms, Healthcare, Gyms, New Business Opportunities, Entrepreneurship.

J.E.L. Codes: I10, L21, L26, M13

Ginásios Clínicos: um passo em direção à medicina preventiva

Maria Gil Branco
152118117

Abstrato

A medicina preventiva está a tornar-se cada vez mais importante no setor da saúde. Paralelamente, existem duas tendências que estão a definir a mudança no setor de saúde: as doenças crónicas estão a afetar uma maior proporção da população, ao mesmo tempo que a sociedade está cada vez mais consciente da importância do exercício físico. Assim, nesta dissertação, estudamos a criação de um novo serviço: Ginásios Clínicos. Este serviço combina a experiência médica e de saúde de um médico com o conhecimento de treino de um profissional de desporto, com o objetivo de criar um plano de treino personalizado para cada paciente, combinando os objetivos físicos de cada cliente com as suas necessidades e limitações patológicas, atingindo assim um treino com especificidade superior aos ginásios tradicionais. Recolhemos 735 respostas em questionários direcionados a potenciais clientes, médicos e profissionais de desporto, através das quais pudemos avaliar a necessidade, o interesse e o público-alvo deste serviço. Através desta análise, concluímos que existe necessidade e interesse neste novo serviço, uma vez que a maioria das três partes envolvidas reconhece as vantagens que os Ginásios Clínicos podem trazer: 63% dos consumidores finais, 72% dos médicos e 65% dos profissionais de desporto, estão pelo menos muito interessados em frequentar ou prestar esse serviço. Além disso, elaborámos um breve plano de negócios para validar a viabilidade financeira dos Ginásios Clínicos. Os resultados obtidos parecem ser encorajadores para a implementação desta oportunidade de negócio, não obstante a análise dever ser aprofundada.

Palavras-chave: Ginásios Clínicos, Saúde, Ginásios, Novas Oportunidades de Negócio, Empreendedorismo.

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"Friends and family make the good times better and the hard times easier"

O meu mais sincero obrigada a todos!

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List of Abbreviations

GGs – Clinical Gyms

PTs – Personal Trainers

TGs – Traditional Gyms

VBHC – Value-Based Healthcare

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1. Introduction

1.1. Background Trends

According to the World Health Organization (2003), "chronic diseases are those that have one or more of the following characteristics: they are permanent, leave residual disability, are caused by nonreversible pathological alteration, require special training of the patient for rehabilitation, or may be expected to require a long period of supervision, observation or care". There are several risk factors to the development of chronic diseases, some of which are modifiable (such as smoking habits, poor diet, alcohol use and insufficient physical activity) or metabolic (such as obesity and hyperglycemia) (Ministério da Saúde, 2018). As a consequence of these cultural and sociological factors, chronic diseases are responsible for 60% of worldwide deaths, a share that rises to 80% if we just consider Europe.

In parallel, nowadays, people are getting more and more aware of their health and the importance of exercising. In 2017 and 2018, the number of gym members in Portugal increased 23% and 17%, respectively (Pedragosa & Cardadeiro, 2019). Nevertheless, 58.2% of the Portuguese population does not exercise on a regular basis (Santos et al., 2016). Thus, it is important to understand why this happens and what can be done to decrease this number.

1.2. Problem Statement and Research Questions

The main objective of this Master dissertation is to test a solution for people who do not exercise due to medical instructions or because they do not feel comfortable enough to go to the gym, while aiming to prevent, or minimize, the effects of chronic diseases. We want to test the viability of creating "Clinical Gyms", a service that combines the fitness objectives of the client with its health limitations, thus achieving a more tailored exercise plan, *vis a vis* a traditional gym.

The purpose is to combine the medical evaluation performed by a Doctor with the elaboration of a training plan made by a personal trainer, which is adapted to the needs of each client. The usage of the joint know-how of both professionals should have synergies since they would be in permanent contact, while reducing the amount of information lost. This should also allow an optimization of the exercises performed, thus enabling clients to achieve their fitness objectives with the minimum possible impact on their health.

The answers we would like to get relate to the following research questions:

R.Q.1: *Are Clinical Gyms necessary?*

R.Q.2: *Are the relevant stakeholders interested in Clinical Gyms?*

R.Q.3: *Who is the target of Clinical Gyms?*

1.3. Academic and Managerial Relevance

From the practical point of view, this dissertation provides preliminary evidence of the existence of a business opportunity in creating a new service that allows exploiting the synergies between Personal Trainers and Doctors while contributing to deliver a more tailored service to the client. Furthermore, our conclusions contribute to the empirical evidence that the healthcare sector is evolving towards a more customer-centric value-based healthcare.

1.4. Methodology: Research Methods

As mentioned before, the purpose of this dissertation is to test a new service, thus, both quantitative and qualitative data were collected, through online surveys and focus groups. Moreover, we also ran a simulation of a real-life appointment between a Doctor and a Personal Trainer.

1.5. Dissertation Outline

This dissertation is divided in five chapters. After the Introduction, we present the Literature Review, where we did a brief description of the literature about entrepreneurship and business opportunities, as well as an overview of the two sectors under study (healthcare and gyms). Then, in the Methodology, we describe how the data was collected and analyzed. Here, we also describe our sample. Moreover, in the Results and Findings chapter, the data collected is thoroughly analyzed in order to answer our research questions. In the last chapter of this dissertation, Conclusions, Limitations and Future Work are presented.

2. Literature Review

2.1. Entrepreneurship

There is no consensus about the definition of entrepreneurship (Venkataraman, 2019), as some authors have a more clear and concrete view, such as Eckthardt and Shane (2003), that defines entrepreneurship as "the discovery, evaluation, and exploitation of future goods and services", whereas others have a more vague and ambiguous definition, such as Alvarez et al. (2013) that refers to entrepreneurship as "any specific institutional arrangements for exploiting opportunities", independently of the characteristics of those institutions. Inversely, the purpose of entrepreneurs does not vary across the literature, with the main goal being to generate economic wealth (Alvarez et. al, 2013 and Kirzner, 1997)

Another topic in which consensus is increasing refers that opportunities are central to entrepreneurship (Shane and Venkataraman, 2000), with this field of study aiming to evaluate how, when, why, and by whom are these opportunities exploited, as well as its social, economical and psychological consequences (both for the entrepreneur and the stakeholders) (Venkataraman, 2019).

Business opportunities imply the formation of different means and/or goals that affect economic exchanges and that are dynamic, being constructed during the process (Puhakka, 2012), unlike decisions relating to optimization or satisfaction, in which the mean or the end is already given (Casson, 1982; Shane and Venkataraman, 2000; Eckthardt and Shane, 2003). In addition, business opportunities are characterized by uncertainty and creativity (Gaglio and Katz, 2001), thus, they cannot be optimized due to the unknown set of existing alternatives (Eckthardt and Shane, 2003).

2.2. Business Opportunities: Formation and Exploitation

Creating a venture by developing a product or service that is not yet in the market is a "multifaceted endeavor" (Finney and Corbett, 2007). According to the literature, there are three main theories that address the formation and exploitation of business opportunities: discovery theory and creation theory (Alvarez & Barney, 2007) and recognition theory (Baron, 2006). However, for this dissertation, we will focus on the first two theories (discovery and creation).

Both theories consider that business opportunities arise from market's competitive imperfections, differing in the origin of those imperfections (Kirzner, 1973). On one hand, discovery theory defends that market imperfections are formed through exogenous factors, such as technological, political, regulatory, social and demographic changes (Kirzner, 1973; Shane, 2003; Barreto, 2012). On the other hand, creation theory defends that those imperfections are originated by endogenous factors such as actions and reactions, and entrepreneurs' ability to try new products or services (Sarasvathy, 2001; Baker and Nelson, 2005; Weick, 2015).

Once an entrepreneur recognizes an opportunity, he can either take time to ensure that the firm has the resources and capabilities needed to succeed in that new product or service, or contrarily, the entrepreneur can exploit that opportunity once it is recognized, and benefit from being the first player in the market (Choi & Shepherd, 2004).

Inversely to what one would expect at first sight, and as previously stated, the simple fact that an opportunity is identified does not directly imply that the entrepreneur should immediately start exploiting it. In fact, there are other relevant variables, besides timing, that should be taken into account in the formation and exploration process, such as investment in scale (needed to benefit from the first mover advantage by tapping the unexplored market), learning (as the process of perfecting a product or service might be costly - and sometimes it is better to learn from others' mistakes), valuable (both for the firm and the user) and durable (Lambkin, 1988; Craig and Lindsay, 2002; Choi and Shepherd, 2004).

2.3. Healthcare sector

The health sector is one of the most demanding sectors and has undergone several changes. It started by focusing on basic and indispensable aspects of life to evolve towards being a service that offers a more complete and complex solution to clients, and whose goals are to treat, cure and prevent, while providing the care that add more value to the patient (Serviço Nacional de Saúde, 2019a). For the sake of example, as considering the Portuguese case, the first nationwide vaccination plan was only implemented in 1965 (even though some vaccines were already mandatory since at least 1894), whereas nowadays there is a vast vaccination plan (Cabral & Pita, 2015). As a result, the number of cases of hepatitis and tetanus have drastically reduced, as well as

cases of AIDS and measles outbreaks (APDSI, 2014; Serviço Nacional De Saúde, 2019a; PORDATA, 2019c).

In addition to the advances in healthcare, we have experienced a change towards people being increasingly aware and concerned about their health, and now actively seeking medical help not only for disease treatment but also, and mainly, for disease prevention (Deloitte, 2019). Thus, we are witnessing a paradigm shift from volume-based to value-based healthcare (VBHC), through which the main objective is to focus on providing higher quality patient services, while ensuring patient safety and cost effectiveness. This healthcare view is aligned with the patient-centered healthcare by focusing on the entire cycle of care, which contradicts the more traditional and standard view of concentrating the caregiver's attention on each individual task performed and services provided (Elf et al., 2017).

Moreover, technology is attaining a greater importance in this sector both for Doctors and patients (Calvillo et al., 2015). At the hospital level, robotics is already used for surgeries, allowing them to be less invasive, while increasing the effectiveness and accuracy of the medical procedures (Ashrafian et al., 2017). From a patient's perspective, the advances in technology also play a very important role, especially regarding disease prevention, as it produces new forms of communication and delivery of information, while strengthening the opportunities for self-care (Ossebaard & van Gemert-Pijnen, 2016). Thus, eHealth – "the use of information and communication technology to reinforce health and healthcare" – is becoming increasingly important (Ossebaard & van Gemert-Pijnen, 2016).

2.4. Prevention

"Prevention is an investment in people's health" (Deloitte, 2017). Due to the paradigm shift from volume-based care to value based healthcare, prevention is gaining more importance for healthcare providers and should be a core component of this trend (Paavola, 2017). However, to achieve the goal of making healthcare more patient-centered, if healthcare institutions continue making the same investments and with the same mindset, it will be impossible to reach their goal and offer a service as VBHC. Thus, more than cure, the focus must be on prevention (Department of Health & Social Care, 2018).

Moreover, there is a broad consensus that prevention is cost-effective, in line with the concept of VBHC, thus ensuring better outcomes for patients since prevention can improve life expectancy (van Kampen et. al, 2014; Paavola, 2017). However, prevention is not only a responsibility of healthcare providers, but also of each individual, so it is important to have preventive behaviors and habits such as not smoking, not drinking alcohol, exercising, among others (Paavola, 2017; Department of Health & Social Care, 2018).

2.5. Overview of the Healthcare sector in Portugal

Currently, there are 10.26 million inhabitants in Portugal (PORDATA, 2020), 21% of which over 65 years and only 14% younger than 15 years old (Ministério da Saúde, 2018). The Portuguese population is aging, which is also reflected by the average life expectancy at birth that has been increasing throughout the years, being currently estimated at 80.8 years old, up from 76,4 years in 2000 (PORDATA, 2019a). Consequently, due to the fact that people are living longer, the pressure over healthcare systems is also increasing, since the increased lifespan also represents more diseases, such as chronic diseases (Ministério da Saúde, 2018). The increase in the average life expectancy together with the increase of chronic diseases, partly justifies the increase in the amount spent of healthcare from €15.5 billion, in 2013 to €18.3 billion in 2018 (even considering the 3% inflation in the healthcare sector from that period) (PORDATA, 2019b).

Healthcare services in Portugal can be divided in two main types of providers: public and private. Currently, there are 225 hospitals in Portugal, being 107 of which public and 118 private (Ministério da Saúde, 2018). Although the main goal of both providers is to treat patients, striving for efficiency, there are some differences between them that are important to highlight. Starting from the public sector, it is divided in primary healthcare (mostly provided in health centers), hospital care (characterized by a greater degree of differentiation when compared to primary healthcare) and continuous care (convalescence, recovery and reintegration of chronically ill, and people in situations of addiction, including home care) (Deloitte, 2011). As per the private sector, it comprises services provided by private entities that complement the public sector, since they have reached agreements with Serviço Nacional de Saúde to provide diagnosis and therapy-related care services (Deloitte, 2011). Moreover, private hospitals allow the decongestion of some public hospitals with higher affluence, which is possible due to the increase of people with health insurance, and are able to provide both a faster and more patient-centered service *vis-à-vis* public

hospitals (Buttigieg et al., 2016). Moreover, an additional key difference between both types of providers is that, since public healthcare is virtually free (for the user), with universal coverage and available for all, as it uses money to provide healthcare, whereas there are restrictions imposed in the private sector, namely in access, as it provides healthcare to make money (Buttigieg et al., 2016).

2.5.1. Chronic Diseases

A disease is classified as chronic if it has "one or more of the following characteristics: they are permanent, leave residual disability, are caused by nonreversible pathological alteration, require special training of the patient for rehabilitation, or may be expected to require a long period of supervision, observation or care" (World Health Organization, 2003). Some examples of chronic diseases are hypertension, hypercholesterolemia, arthrosis, allergy, depression, chronic pain, anxiety, diabetes, chronic obstructive pulmonary disease, cancer, asthma, Alzheimer, among others (Santos et al., 2016; Serviço Nacional de Saúde, 2019b). These diseases are responsible for roughly 80% of all deaths registered in European countries, mainly due to the social and lifestyle characteristics of these countries, in which there are a greater portion of sedentary, smoking and overweight citizens (Ministério da Saúde, 2018).

Since this type of diseases needs permanent/recurring care, one should expect that, on average, patients with chronic diseases have medical appointments more often. In fact, patients with two or more chronic diseases have, on average, between 9.4 and 18.6 appointments per year, which represents a difference of 5.6 to 12.5 appointments when compared to those that have one or no chronic diseases. Thus, a significant amount of health providers' resources are devoted to patients with chronic diseases, with 78% of primary care medical appointments being for people with two or more chronic diseases (Romana *et al.,* 2019).

In Portugal, 3.9 million inhabitants between 25 and 74 years old have at least one chronic disease, representing 57.8% of the Portuguese population. In Portugal women are slightly more affected by these diseases than men, as 62% of Portuguese women have at least one chronic disease, compared to 53% of Portuguese men. The increasing expression of chronic diseases is a reflex of an increase in the average life expectancy, as both the amount of diseases and the extent to which citizens are affected increase with the age (Santos et al., 2016).

2.6. Overview of the Portuguese Gyms' Sector

"Whether for a more aesthetic image-related issue or demand for a healthier lifestyle, fitness seems to assert itself as a future trend" (Consumer Trends, 2017). This evidence is supported by the growth in the number of gym members, with a registered increase of 23% in 2017 and a 17% increase in 2018 (Pedragosa & Cardadeiro, 2019).

The percentage of men and women exercising at gyms is almost the same, however there is a slightly higher prevalence in women, which represents around 53% of the gyms' members. In what regards the members' age range, the most active users of gyms are those who have between 31 and 64 years (representing around 46% of the gyms' members), followed by individuals with ages ranging between 16 and 30 years (totaling 42% of gym members). Individuals younger than 16 and older than 64 are the age ranges less representative of the gym community, representing 5% and 7% of the users, respectively (Pedragosa & Cardadeiro, 2019).

The frequency of exercising also varies among the gym users, with only around 13% of the members exercising at least 4 times per week, with the others being equally distributed between those that are used to exercise once (or less) a week (43%) and those that go to the gym twice or three times per week (44%) (Pedragosa & Cardadeiro, 2019).

There are three types of gyms in Portugal: low-cost, mid-market and premium. Besides the price, the main difference between these types of gyms is the concept in which they are based. In one hand, low-cost gyms intend to be practical and accessible (Garcia et al., 2017), thus in the majority of the low-cost gyms, people can exercise in any of the chain's gyms, with the only goal being to exercise, with a "self-service operating philosophy" (Garcia et al., 2017). On the other hand, premium gyms' aim is to provide a more personalized and customer centric experience, while also being a space where people go not only to exercise, but also to eat, to spend quality time with family and friends, thus having restaurants, spa, paddle, football and ballet classes, among others.

Apart from gyms, there are several industries that prove that people are getting more and more worried and conscious about their lifestyle habits. As an example, in Portugal, since 2004, the number of federated sports players have increased from 402 thousand, to over 624 thousand in 2017, an increase of over 55% (PORDATA, 2018).

3. Methodology

3.1. Research Design

The purpose of this dissertation is to study the potential of Clinical Gyms. Thus, in order to reach the aim of our work, both quantitative and qualitative data were collected.

To gather quantitative data, three online surveys were done to analyze the perspectives of the main stakeholders involved in this new service (consumers, healthcare professionals and sports related professionals). After the surveys, in order to collect the qualitative data, a focus group was performed, to clarify some results that we attained through the surveys. Additionally, a simulation was conducted to understand how appointments would work in a real context, as well as the differences between sports related professionals ("PTs") and Doctors' approach, and the dynamic between both professionals.

On one hand, surveys are usually used as quantitative approach. Thus, the reason why online surveys were carried out was due to the fact that this method helps researchers to gather large amounts of data in a short period of time (Lefever et al., 2007), while removing geographical barriers (Evans and Mathur, 2005). Additionally, surveys enable both the questions and the answers to be consistent across the whole sample, allowing the researcher to aggregate and analyze it in an easier way (Brace, 2018). Lastly, surveys yield better results compared to personal interviews, since it reduces any preexisting bias of the interviewer (Bronner and Kuijlen, 2007).

On the other hand, focus groups are usually used as a qualitative approach, in order to achieve a detailed understanding of the topic under studying, obtaining data and insights from a particular group of individuals rather than a wider sample (Nyumba et al, 2018), enabling the researcher to understand why and how do people behave and act in a certain way (Segar et al., 2017).

Lastly, simulations allow a more practical study of real-life situations, enabling the researcher to run a rather fast, cheap, small-scale pilot, while concluding on the viability of the implementation of this service.

3.2. Research Approach

3.2.1. Concept Testing

In this dissertation, a concept testing was carried out to evaluate stakeholders' interest in CGs prior to its introduction in the market. Thus, both quantitative and qualitative data were gathered in order to understand the viability of this service taking into account their interest on it.

3.2.2. Inductive Approach

Due to the novelty of this service, there is very little Literature Review about this topic, hence we followed an inductive approach. As stated by Thomas (2006), "the primary purpose of the inductive approach is to allow research findings to emerge from the frequent, dominant, or significant themes inherent in raw data", thus enabling the researcher to avoid biases and preconceptions in the data collection.

In our case, to draw conclusions, we tested the viability of CGs in Portugal with both its potential providers and end-users. To enable a more accurate comprehension of the concept, an indirect comparison was made with traditional gyms, then adding the main differences which this venture intends to provide to the market. In short, we aimed at hypothesizing the supply and demand for this new service, based on the willingness of professionals to provide this service and the willingness of consumers to subscribe to CGs.

3.3. Research methods

3.3.1. Data Collection

3.3.1.1. Primary Data

3.3.1.1.1. Quantitative Research

As mentioned above, during this dissertation, quantitative data were collected. Thus, three online surveys were conducted with different research purposes, explicitly aimed at different types of individuals, namely consumers (end-users), healthcare professionals and sports' related professionals. In order to gather responses, we used the non-probability sampling technique, due to the complexity of randomly sampling the whole population which met the sample criteria. In the professional's surveys, the referral/snowball sampling technique was used, since the surveys were

distributed to close PTs and Doctors, that were later on asked to share it with those who they considered to be suitable respondents that fitted the desired sample. Regarding the consumers' survey, we used the convenience sampling technique through which respondents were chosen based on the availability. To construct the surveys, we used *Qualtrics Software.*

All surveys aimed to answer two of our three research questions: the necessity of CGs and the interest of the stakeholders involved. Then, through the consumers' survey, we also answered to our third research question: the target of CGs.

In our first survey, that was directed to end-users, data was collected through different social networks (Facebook, Instagram and Linkedin), aiming to reach the maximum amount of people, allowing us to have a diversified sample and as close as possible to the whole Portuguese population. In this survey, prior to the concept of CGs being presented, we tried to understand respondents' healthcare habits and lifestyle routines in order to understand the unconscious necessity that they have in a service like CGs. Then, after the presentation of the idea, we tried to analyze consumers' interest in attending CGs.

The second survey was directed to sports' related professionals and to collect this data, we shared the surveys with sports professionals of different gym chains (Solinca, Fitness Hut, Kalorias, among others). This survey also has questions before and after CGs being presented. Before the concept presentation, we tried to understand the importance given by these professionals to their athletes consulting a Doctor before exercising. After the presentation of the service, we wanted to understand sports' related professionals interest and willingness to provide this service.

Finally, our last survey was directed to current and future healthcare professionals, and in order to gather data we shared it with different hospitals and schools (Hospital Luz Saúde, José de Mello Saúde, Hospitais Médio Tejo, Hospital São Francisco Xavier, Universidade de Medicina de Lisboa and Nova Medical School). We followed the same structure of the abovementioned surveys, having divided the questions *pre* and *post* conceptualization of the idea. In the first section, we wanted to understand professionals' current exposure to exercise-related matters in their work, namely if patients sought and relied on them to get advice, as well as their view on the importance and relevance of patients getting this counseling. Then, as in sports related professionals' surveys, we aimed to understand this professionals' interest and willingness in providing this service.

Winding up, this work intends to evaluate the need, interest and viability of pursuing this venture, based on the perspectives of all interested parties, users and providers, as both views are equally relevant and important, since the lack of interest of one of the parties would obliterate the viability of this service. Hence, the joint predisposition and willingness to engage in this new service from consumers and professionals (both Doctors and sports related) comprise a *sine qua non* condition for the implementation of CGs.

3.3.1.1.2. Qualitative Research

The qualitative method used was the focus group, as it is a methodology that allows to collect ideas from different people more efficiently, generating a structured discussion where the ideas complete and complement each other.

Our focus group was held in November 2019 at Católica-Lisbon SBE's facilities. It started broadly with questions about the lifestyle and health of the participants, namely related to their medical background and exercising habits (e.g. did you had any injury; how many times per week do you exercise; if applicable, why do you not exercise?). Following this first set of questions, the moderator started deep diving into the participants' perception about clinical gyms, including their preferences about its main attributes (e.g. what do you value about CGs?; where would you feel more comfortable attending this service?).

Additionally, in order to have an idea of how the contact between the PT and the Doctor will happen, we did a simulation, where two hypothetical cases were studied (herniated disk and postpartum recovery). We started by asking the PT what type of exercises she would follow in each of the situations, and then we challenged the Doctor to comment on it, based on her clinical knowledge.

3.4. Measurement Scales

Likert scale is the most reliable and widely used scale in surveys to quantify hard-to-measure data, since it assumes that attitudes are linear and can be measured (Pavlov et al., 2019) . Thus, it has the same number of negative and positive responses.

The scales used during this research can be summed as follows:

- 2-point scale: for direct and unambiguous situations (Yes/No answers)
- 5-point scale: to measure respondents' lifestyle, degree of interest, degree of necessity, degree of satisfaction, degree of importance, degree of willingness, performance and frequency
- 7- point scale: to prioritize
- 10-point scale: degree of recommendation
- Ranges: in sensitive information, namely age, income and price

As per the analysis of such scales, the attitude of respondents was evaluated according to the direction (ex. agree/disagree) as well as the intensity (ex. by strongly agreeing or not) of attitude (Albaum, 1997).

4. Results and Findings

4.1. Data Collection and Treatment

Survey 1: End- Users

In this survey, we had 594 answers, from which 455 were complete, thus, in order to be consistent throughout our analysis, the remaining 139 incomplete responses were disregarded. Additionally, due to the fact that we are only focusing our analysis in the Portuguese market, the 10 international responses were not considered. Having this said, for our analysis 445 answers were taken into account.

Survey 2: PTs

For this survey, we collected 91 answers, from which 18 were not complete. After the elimination of the incomplete answers, we disregarded one answer due the fact that the respondent was an engineer, thus does not fitted the purpose we wanted to analyze. Thus, our final sample is composed by 72 responses.

Survey 3: Current and Future Healthcare Professionals

In this survey, we gathered 241 answers, and, to be consistent in our analysis, we only had to disregard the 23 that were incomplete. Apart from that, all the completed answers were considered valid for our analysis, thus we have analyzed 218 responses.

However, due to the fact that we had Doctors from different specialties answering our survey, and none were representative enough, we grouped them among the main categories, with respondents being divided between Doctors (physiatrists, orthopedists, pediatricians, cardiologists and internal medicine specialists, representing 48 answers), Nurses (30 answers), Medical Students (89 answers), Physiotherapists (42 answers) and Others (9 answers).

4.2. Descriptive Statistics

Survey 1: End-Users

As mentioned above, in this survey we had 445 respondents, from which 67% were women and 33% men (Figure 1). Regarding age, the prevailing age range is between 21-30 years old with 38%, followed by 41-50 (18%), 51-60 (16%), under 20 (13%), 31-40 (10%), 61-70 (3%) and over 70 (1%), as we can see in Figure 2. Concerning the education background, as we can see in Figure 3, the most representative sub-sample has a bachelor's degree (39%), followed by high school, master's degree, lower than high school and PhD (29%, 24%, 7% and 0.4% respectively).

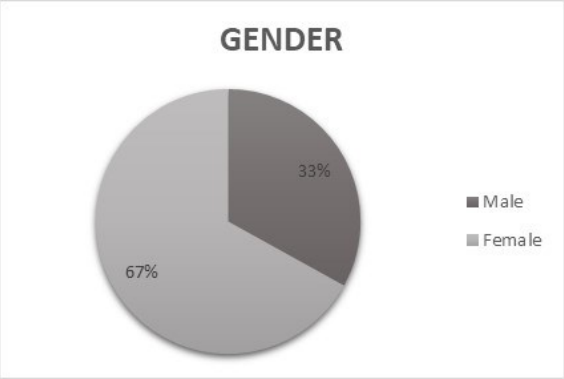

Figure 1 – Respondents' Gender

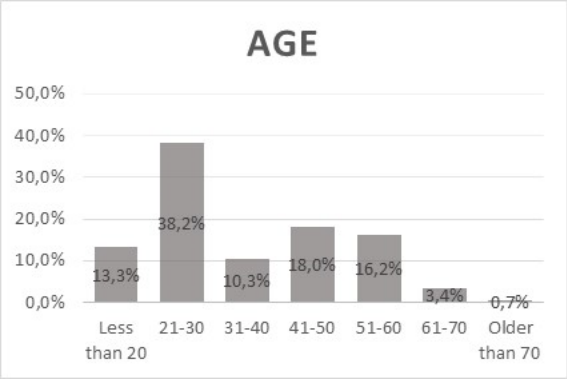

Figure 2 – Respondents' Age

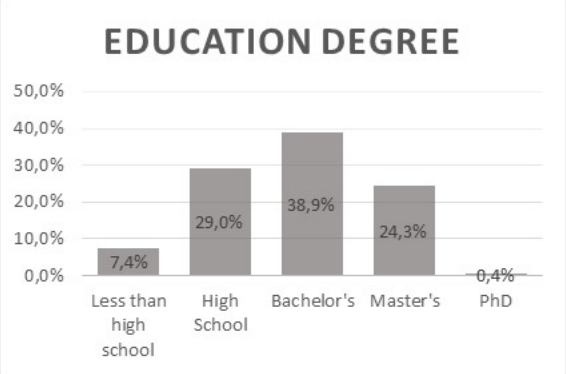

Figure 3 – Respondents' Education Level

In addition, the dominant ranges of annual income are less than €10,000 and from €10,000 to €19,000, amounting, together to 69% of respondents, as per Figure 4. Moreover, 35% of the sample does not have health insurance (Figure 5).

Figure 4 – Respondents' annual income

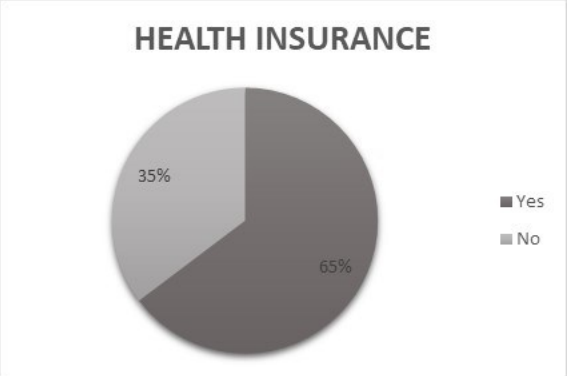

Figure 5 – Health Insurance

Furthermore, 23% of the respondents have physical limitations or diseases, within which 50% have chronic diseases. Additionally, 64% has already had an injury, out of which 47% did physical therapy (Figures 6 and 7).

Lastly, our sample is composed by 49% of respondents who usually exercise, compared to 51% that do not exercise (Figure 8).

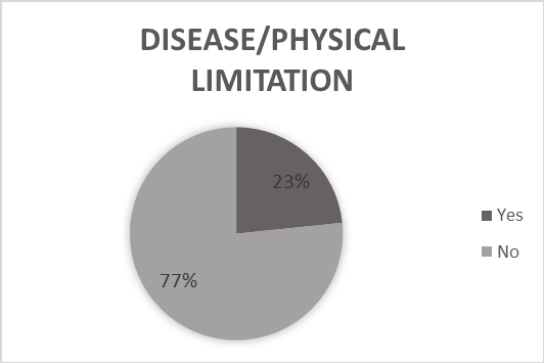

Figure 6 – Respondents having diseases/limitations

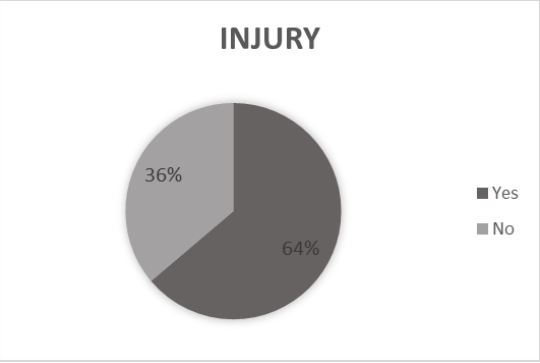

Figure 7 – Respondents having had injuries

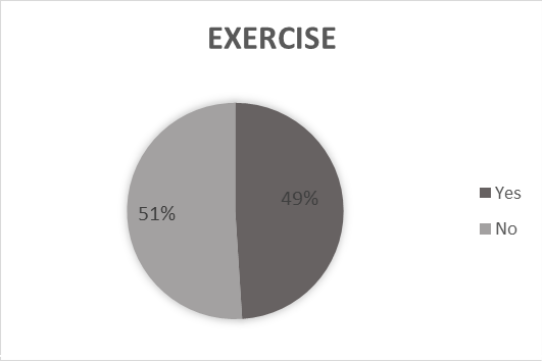

Figure 8 – Respondents' habit of exercising

Survey 2: PTs

We had 72 sports' professionals responding this survey, from which 57% were women and 43% men, with those aged between 20 and 30 years old representing 60% of the whole sample, followed by 31-40 (19%), under 20 (8%), 41-50 (7%), 51-60 (4%), and over 60 (1%), as we can see in Figures 9 and 10.

From our sample, the majority (76%) is currently working, from which 38% are employed as a personal trainer, 27% as physical education teacher, 15% as coach and lastly 20% work in other areas, such as swimming teacher (Figures 11 and 12).

Lastly, as per Figure 13, 56% of the respondents are used to monitor people with physical limitations/restrictions.

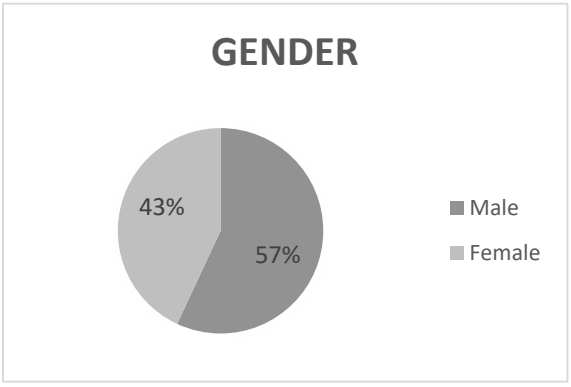

Figure 9 – Respondents' gender

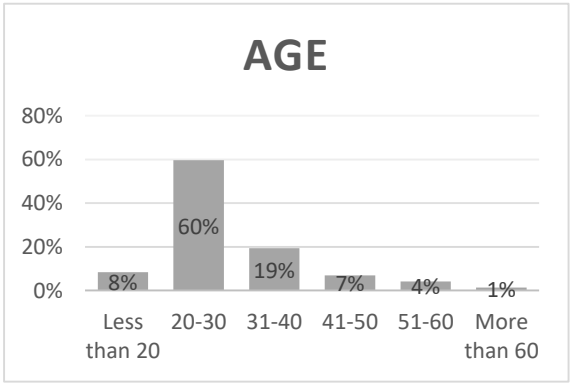

Figure 10 – Respondents' age

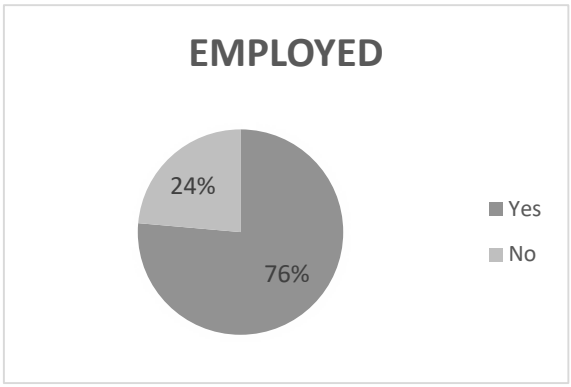

Figure 11 – Respondents' employment status

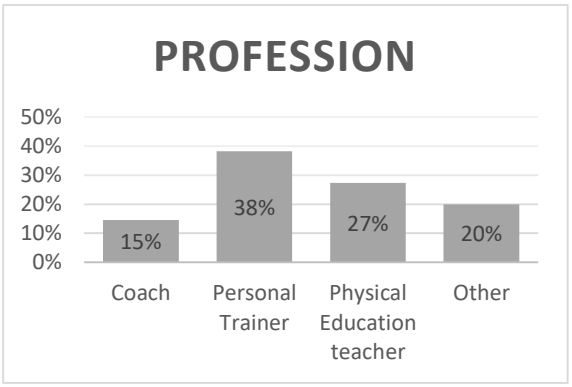

Figure 12 – Respondents' profession

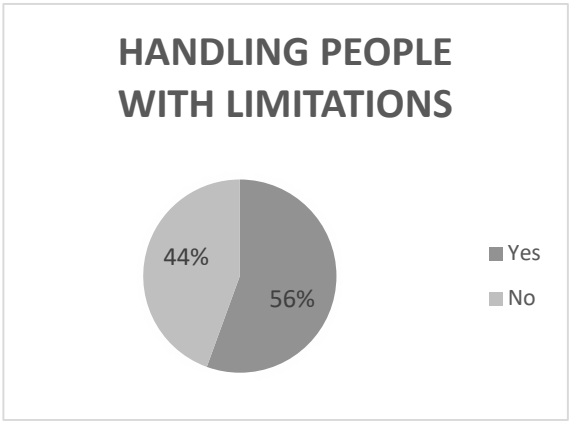

Figure 13 – Respondents' used to monitor people with physical limitations

Survey 3: Current and Future Healthcare Professionals

In our last survey, we collected 218 responses from different areas within the healthcare sector, namely medical students, Doctors, physiotherapists and nurses, representing 41%, 22%, 19%, and 14%, respectively, being the remaining 4% correspondent to other healthcare professionals such as surgeons, nutritionists and occupational therapists (Figure 14). With these, as we can see in Figure 15, 57% work in public hospitals, 18% in clinics, 16% in private hospitals and 8% in institutions or health centers (which are the *others*).

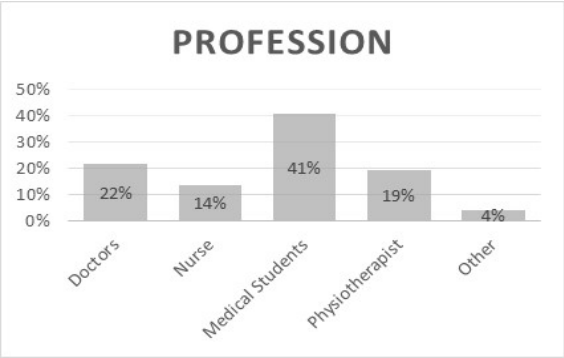

Figure 14 – Respondents' profession

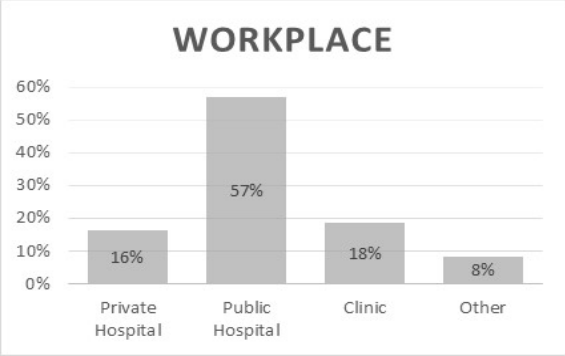

Figure 15 – Respondents' workplace

Our sample is composed by 78% women and 22% men, from which 58% are between 20 and 30 years old, 20% have between 31-40, 12% are under 20, 6% are aged between 41 and 50, 4% have 51-60 and 0.5% are older than 70 (Figures 16 and 17).

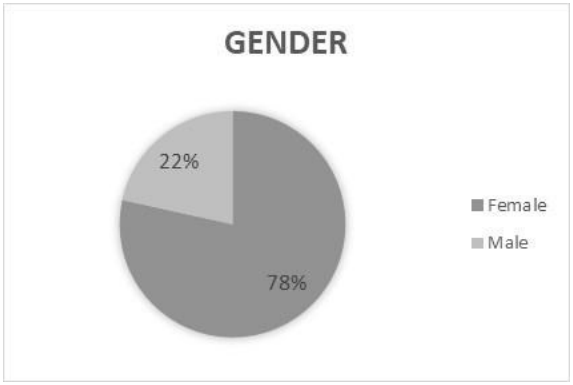

Figure 16 – Respondents' gender

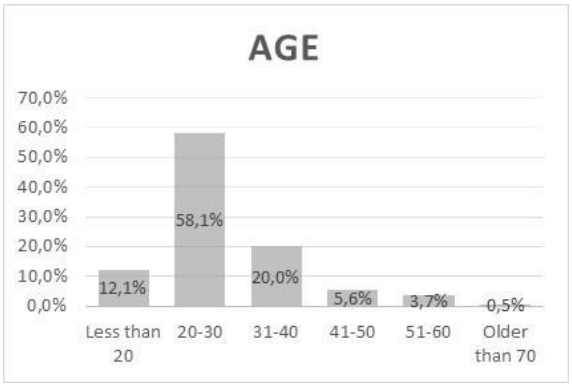

Figure 17 – Respondents' age

Focus Group

The focus group counted with 9 participants, from which five were men and four women, with ages between 20 and 26 years old, as we can see in Figures 18 and 19.

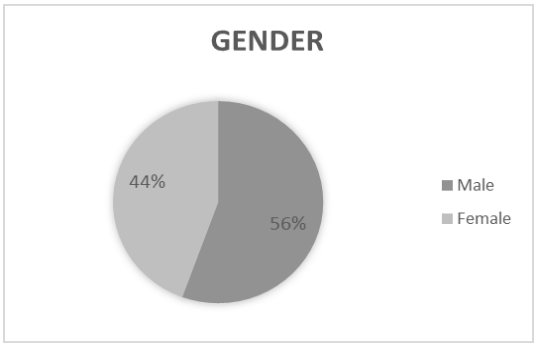

Figure 18 – Participants' gender

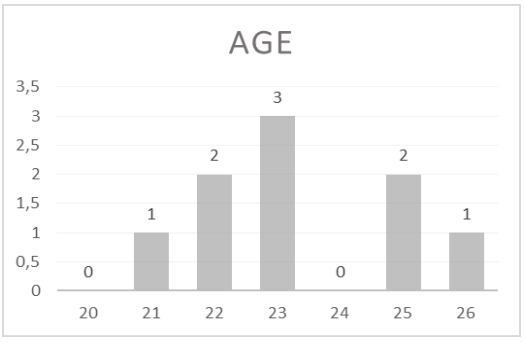

Figure 19 – Participants' age

We tried to diversify our focus group as much as possible, thus we had a pediatric nurse, an internal Doctor, a medicine student, a PT, a student from sports science, a physiotherapist and three managers, from which six had already done physiotherapy (Figures 20 and 21).

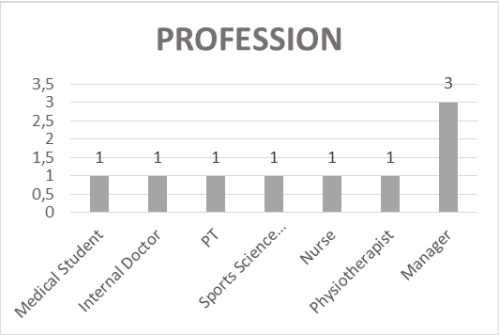

Figure 20 – Participants' profession

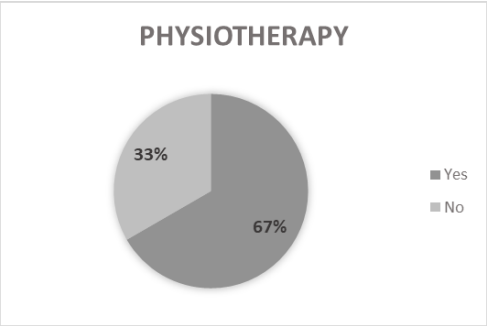

Figure 21 – Percentage of participants that undergone physiotherapy

4.3. Necessity

R.Q.1 - Are CGs necessary?

H1: There is a need for this service

To fully address R.Q.1 and H1, one must consider all parties involved with the provision of this service, namely those who provide it (Doctors and PTs) and those who intend to use it (the prospective clients and end-users). Thus, an analysis of several dimensions of each specific survey shall be done in order to evaluate the need for CGs.

4.3.1. End-Users

Starting from the agents that create the demand for this potential new service, there were several questions included in the survey to try to measure the (conscious or unconscious) perceived necessity for this service (either for themselves or others).

Prior to the accurate description of the intention of this Business Opportunity, we asked about the simple idea of having a Doctor tracking their progress at the gym. Without yet knowing anything

about this concept, over 75% of respondents answered that they considered this new venture as needed (even those that do not go to the gym) – Table 1.

Also prior to understanding the concept of CGs, and considering only those that have suffered an injury and had to undergo physiotherapy, the majority of the respondents had a positive experience regarding the guidance on which exercises they should (or not) do to improve their condition during the physiotherapy sessions. Inversely, when considering the follow-up after the physiotherapy, the majority of the sample had a rather negative experience, with 48% of respondents classifying the guidance as "non-existing", as we can see in Table 2. After looking at these results, we decided to test if the past experience had an impact on the degree of interest that this sub-sample had in the service. As per Table 3, we can see that the respondents that are more interested in CGs are the ones that either had a really positive experience or the ones that had a not so pleasant experience.

As we found these results rather intriguing, we decided to discuss this matter in the focus group. Luckily, some of the attendees had done physiotherapy, and the ones that were satisfied with the guidance recognized the importance of having medical support, thus considering interesting and important this business opportunity. Inversely, those with worse experiences felt the need of additional guidance and support, thus the appeal of a service like CGs.

Moreover, even before the introduction of CGs, questions were asked about the respondents' lifestyle, namely if they exercise and, if not, why. The analysis of the responses shows that nearly half (48%) of the respondents that do not exercise, do so since they do not feel part of the gym community (Table 4). This topic was both approached in the survey as well as in the focus group. Through the survey we concluded that 37% (Table 5) of the respondents that do not exercise, do it as they do not know what training plan they should follow, thus guidance would be very helpful for them. When exploring this issue during the focus group, the consensus was that some people do not go to the gym because they feel old and/or insecure about their body, not only because of the weight but also because they do not feel fit enough to go to gyms where most users' body is already in shape. It was also meaningful to notice that those that highlighted having any physical limitation as one of the three main reasons not to attend gyms were the ones that attributed a greater necessity to this service, with 80% considering this service necessary (Table 6).

Then, after the concept of CGs was presented, as we can see in Table 7 respondents were asked to evaluate how different they find it comparing to traditional gyms, and only 0.4% of them found it

the same. Thus, 99.6% recognize that there are differences between CGs and the service currently offered, with 77% of those considering this service at least a lot different from regular gyms. In addition, among those that go the doctor less often (and are thus more prone to unknowingly have physical limitations), 3 out of 5 respondents would be interested in this service (Table 8), thus contributing to an increase in the awareness about their body and condition.

Another angle by which this service might add value to users is by allowing them to escape a sedentary lifestyle, thus contributing to the overall health of the population. In fact, among the respondents that consider living a sedentary lifestyle, over 50% consider CGs necessary (Table 9).

In short, we believe that these results point towards people's conscious and unconscious recognition of the need of a service like this, as they value CGs attributes, its characteristics would have been useful to respondents in the past, and the provision of such service would benefit respondents' health and lifestyle.

4.3.2. Sports Related Professionals

In order to answer R.Q.1, we made questions about PTs' necessities while monitoring clients. Thus, we followed the same structure as in consumers' surveys, asking questions before the respondents knew the concept of CGs.

Through these questions, we could assess that the majority (56% - Table 10) of the professionals are used to monitor people with physical limitations/restrictions and that 88% of respondents, independently of being used to monitor these people, consider utmost important that patients undergo medical evaluations before starting any sport/exercise, being also relevant to mention the *quasi*-consensus between the professionals, since none consider that medical evaluations is only slightly important nor not important at all (Table 11).

As we can see in Table 12, this consensus was maintained after the introduction of CGs, where every professional recognized this service as beneficial for patients, having rated the advantages of this service with an average of 4.75 out of 5. Another evidence of this, portrayed in Tables 13 and 14, was the 96% of the respondents saying that this service would improve their confidence in what regards client's health and well-being, while contributing to an increase in the trust that clients have on professionals' work, something that is agreed by 83% of PTs.

4.3.3. Current and Future Healthcare Professionals

Finally, to answer thoroughly whether CGs are, in fact, needed, Doctors were inquired to (i) explore some of the patients' motives to consult them, while (ii) enabling us to understand the Doctors' perception about this service, without being biased. In what regards medical students, they have not been asked practical questions about the reasons that lead patients consult them, but similarly to Doctors we evaluated their opinion before they know the service.

Therefore, prior to the presentation of the CGs concept, 82% (Table 15) of the respondents stated that they consider extremely or very important their patients undergoing a physical evaluation before start exercising. However, as per Table 16, 63% of the current health professionals are never or almost never consulted by patients to get advice from them before start exercising, with only 5% being consulted very often or always. These results are slightly skewed from what we found with consumers, where 82% said they never or rarely went to the Doctor before starting exercise. The reason for this deviation may be due to the fact that the target of this survey were health professionals who, at the outset, will be those whom patients will turn to if they want to have an opinion on whether or not they can do sport.

In order to validate if the CGs satisfy this need for prior consultation, after the concept was presented, 86% of current and future health professionals stated that this service was extremely or very advantageous for patients, assigning an average rate of 4.28 out of 5 in terms of the benefits that CGs can bring (Table 17). Moreover, Table 18 suggests that, besides the professionals' sense of need for this service and for a pre-exercise appointment, 97% of them also consider regular follow-up appointments of utmost importance.

4.3.4. Appointment Simulation

Through the simulation with a PT and a Doctor, we wanted to test how an appointment would work in a real-life situation. Thus, two hypothetical situations were discussed: a patient with a herniated disk and a postpartum recovery.

In the first case, the PT highlighted the need to strengthen the abdominal muscles, especially the muscles of the torso, through exercises without weights that could damage the spine and swimming (backstroke). When faced with these recommendations, the Doctor agreed with the realization of exercises without associated weights, and that could affect the spine. However, she reinforced the lack of a "standard" exercise adequate for each pathology, and that each patient must be evaluated

in a case by case basis. Moreover, she also added that there were cases in which she would highly discourage any sort of exercise.

As per the postpartum recovery, the PT prescribed light and static abdominal exercises aimed at reconstructing the abdomen, a suggestion with which the Doctor agreed, as this is a more standard case.

In short, we felt that the PT seemed to adopt a more linear and straightforward perspective when dealing with these two hypothetical patients, promptly suggesting which exercises should be done. Inversely, the Doctor stressed the need to deeply understand the patient pathology and limitations, and that, at least in a first stage, her advice would be to cease doing exercise, until a more accurate diagnosis had been reached.

Although this experiment was nothing more than a simulation, in this brief exercise it was clear that there is the need to include both the Doctor and the PT when suggesting the exercises and designing the training plan. This is a consequence of the Doctor having a clearer view on the limitations of the patient, and the PT knowing which exercises should be performed to tackle the patient's recuperation.

4.4. Interest

R.Q.2 – Are the stakeholders interested in CG?

H2: Agents are interested in this service.

In the three surveys, the topic of interest was the most discussed, as, although we have concluded that this service is needed, the viability of this business opportunity is highly dependent on the interest it might generate. In fact, if there is no interest neither from consumers nor professionals, the service itself does not make sense.

4.4.1. End-Users

The most relevant source of interest shall be consumers, as they are the ones that drive demand for this service. Thus, in this section of the dissertation, we will have a broad view of respondents' interest in CGs, and then, in R.Q.3, we will deeply analyze this topic.

To start, we concluded that the majority - 63% - of our sample seems at least very interested in CGs, having attributed 4 or 5 (out of 5) to this question, and only 12% of our sample demonstrated a lack of interest in this service, as per Table 19. Additionally, within those who showed higher interest, 73% stated that they would be enrolled in CGs if this service was already available in the market (Table 20), thus one would say that those respondents are the ones who are truly interested in CGs. As we can see in Table 21, within those that have more interest, 78% prefer to attend CGs in gym-like facilities, compared to 22% that would prefer to see this service being provided by a hospital. This is a topic that will be further developed in section 4.7 – Place.

In the previous section, before knowing the details of CGs, respondents were asked how interested they would be in having a Doctor tracking their training plan, where 75% of respondents answered positively (Table 1). However, interest in this feature grew after people got to know better the concept of CGs, since 81% of the respondents considered at least very important to have regular medical appointments, an increase of 6 p.p. (Table 22).

Regarding the features that CGs may have, Table 22 gives us an overview of which are the characteristics and complementary services that consumers value the most (by order of preference): price, regular medical appointments, nutritionist, location, an app where they can check PTs and Doctor's reports, the equipment's offered and classes and lastly extras, like pool, massages, among others.

Finally, looking at Table 23, we can see that people consider this service mainly as being innovative (52%), important (49%), safe (49%), trustworthy (38%) and supportive (38%).

The results attained by analyzing the first agent seem to show that the end-users are interested in this service. Moreover, the number of respondents that were interested in being tracked by a doctor also validate the same conclusion, being enhanced by the increase in interest in this feature after the concept of CGs was explained.

4.4.2. Sports related professionals

Moving forward to the professionals' point of view, our main objective is to understand if PTs are willing to provide this service. Thus, an analysis regarding the age, gender, profession and their perception towards this service and their relationship with clients were done.

Taking a global perspective, according to Table 24, we can see that 65% of the professionals' sample are willing to provide this service. Deep diving into our responses, we can see that both age and profession seem to influence the willingness to provide this service.

As we can see in Table 25, the older the respondents are, the higher their predisposition to accept working in CGs is, which can be explained by what was discussed in the focus group, where the PT said: "*We gain experience over time, thus consequently as we get older we also get more experienced. And the more experienced, the more comfortable we are to deal with pathologies and direct the train to health rather than fit"*.

Although the interest seems independent of the profession, and the majority answered positively to their willingness to provide this service (Table 26) those that currently work as Personal Trainers are the ones that demonstrated most interest, which may be due to the fact that those should be the ones whose job will be less affected, as assisting traditional gym users only differs on the exercise restrictions imposed by clients' health limitations, when compared to CGs users.

However, in what concerns gender, both genders show almost the same interest in providing their services in CGs (Table 27).

Summing up, through the analyses of this questions, we infer that our PTs shall probably be older (aged between 40 and 60) and, ideally, have past experience as PTs.

4.4.3. Current and Future Healthcare Professionals

Now, that we have seen that there are potential clients for CGs, and that PTs are willing to provide this service, we ought to verify if Doctors, or at least future Doctors, are interested on it.

As previously mentioned, we divided the employment occupations of our respondents in four groups: Doctors, nurses, physiotherapists and medical students. However, in order to answer this research question, our main focus will be Doctors, which are those that are the target to provide this service, because are those professionals that are more reliable to evaluate patients in what concerns their physical condition. Although medical students have not yet chosen their specialty and are not yet practicing, this group of people will represent future Doctors and as such their opinion is important, although they have an incomplete real-life knowledge regarding patient's needs.

Having this said, through our survey we concluded that 71% of the Doctors and 67% of medical students are willing to provide this service (Table 28). Here, we considered important to make a separation between the specialties, mentioning that 100% of the cardiologists, and 75% of the physiatrists, orthopedists and pediatricians seemed at least very likely to work in CGs. The health professionals that show less interest in working on CGs are internal Doctors, since, as we can see in Table 29, 45% seems to be, indifferent or less in providing this service.

We also decided to emphasize the physiotherapists, since in the medium/long term it might make sense for them to also be part of this service, being responsible for monitoring more complex pathologies and requiring not only monitoring but also, and most importantly, treatment. Hence, we concluded that 86% of these professionals are available to work in partnership with CGs, as per Table 29.

Of the sample considered in this analysis, i.e., excluding Nurses and Others, 51% of Doctors and future Doctors who said they were unlikely or extremely unlikely to provide this service attributed at least 4 out of 5 to the importance of CGs for them as Doctors (Table 30). These results seem inconsistent, thus this was one of the topics discussed in the focus group. Unfortunately, we did not have any Doctor or future Doctor that identified with these results thus, we are not be able to explain this properly.

Then, we tried to understand if the place where Doctors work have impact on the willingness they show in providing this service and we concluded that people who work in private hospitals are the ones who seems most interested in being part of these multidisciplinary teams, as we can see in Table 31, since 90% of Doctors who work in the private sector are very interested in this service compared to 67% of those working in the public hospitals. This can be explained by the fact that private hospitals focus more on preventive medicine, as we saw in the first chapter of this dissertation, and thus these services and objectives are more familiar for the professionals who work there.

Lastly, we analyzed the impact that age and gender have on the willingness demonstrated by Doctors to work in CGs. In what regards the age, as we can see in Table 32, although the youngest are those that seem least likely to work in CGs, at least 70% of all ranges assumed to be interested in providing this service, which proves the validity and robustness of the interest of this stakeholder. A possible justification for the younger being more interested in engaging with CGs

might be the fact that most of respondents have between 20 and 40 years, thus their results providing a more accurate analysis, since we expect a more broad, diverse and representative range of answers. Regarding gender, although men show an interest slightly higher, when compared to women, we seem to find no relationship between these two variables, as we can verify through Table 33.

4.5. Target

RQ.3 – What is the target of CGs?

H3: There is a clearly defined group of people to whom CGs shall be directed.

Now that we have concluded that there is a need for this new venture, and interest from all agents involved, both in providing services and attending CGs, we shall evaluate to whom this service is or should be directed.

Thus, we relate the interest that people have on CGs with different variables, namely the satisfaction they have shown in having a Doctor monitoring them, the regularity with which respondents go to the Doctor, whether they exercise or not, their lifestyle, age, gender and revenues. With these questions, we aim to understand if there is any relationship between these variables and the interest people have on CGs, thus enabling a more accurate implementation of this business opportunity.

As we can see through Tables 34 and 35, the interest people show on having regular appointments is independent from the age and gender, and above 85% in all cases. In addition, the perception they have regarding the importance of these medical appointments is also independent of the regularity with which they are used to go to the Doctor, which is ambiguous and shows the potential relevance CGs could have to respondents by enabling and increasing their contact with Doctors (Table 36).

Another factor that could influence respondents' perception about CGs is if they currently do, or do not, any sort of physical exercise. Thus, we also tested whether there is any relationship between the interest shown in CGs and the habit of exercising. Once again, although interest is slightly higher for those who are used to exercise, the difference for those who do not exercise is very small, as the average degree of interest for those who exercise is 3.7 (out of 5), and 3.6 for those who do

not exercise (Table 37). Moreover, between those that exercise, the ones that do it in the gym showed a greater interest in this new business, with 70% saying they had at least a lot of interest (or at least 4 out of 5) in this service compared to 61% of those who exercise outside the gym (Table 38).

Within the respondents that do not exercise regularly, and that showed a greater interest in this service, we also tried to deep-dive into the main reasons that they chose not to exercise and try to understand how CGs could prevail over them. Starting with those reasons that could be more difficult to overcome, 82% of respondents that showed interest in this service and that do not currently exercise, mentioned the lack of time as one of the main reasons not to exercise, as we can see in Table 39. This matter also affected some of the elements present in the focus group, who discussed, although it was not an unanimous opinion, that a possible solution would be to have scheduled appointments and work-out slots which users could *ex-ante* include in their weekly schedule, without being dependent of their "will" to go to CGs each time. Moreover, 52% of this sub-sample's respondents mentioned that they did not like to exercise as one of the main factors, an issue in which CGs do not add value (Table 40).

However, there are reasons why respondents do not exercise that can be, at least partially, overcame by CGs. Within this group, as we can see in Tables 41 and 42, 39% stated that one of the top three reasons not to exercise were the lack of knowledge about which exercises to do, and 24% had physical limitations, with both factors being within the scope of action of CGs, which could induce these respondents to start exercising. Lastly, 48% (Table 43) of those that do not exercise and are interested in this service, do not feel part of the gym community, and CGs could constitute a more friendly and viable alternative to the current gym's environment.

Furthermore, we also evaluated if the interest people have on CGs is influenced by their lifestyle, through which we got to the conclusion that 54% of those who tend to be sedentary, with 1 or 2 out of 5 allocated to this metric, display a higher interest in this service (4 or 5, out of 5) (Table 9). It is worth noticing that, within the most sedentary, 39% said they would be enrolled in a CG if this service was already available in the market (Table 44).

Additionally, a demographic analysis was conducted to see if there was any pattern among the people who showed the most interest in this business. Thus, we analyze the age, gender, annual income, people's diseases and/or physical limitations, among others.

Starting from the age, and as we can observe in Table 45, there seems to exist a correlation between this variable and the interest shown by consumers, since as people get older, the interest shown by them increased, maybe due to the fact that they are starting to have more health concerns and problems, thus prevention gains importance for them. Regarding gender, women are more interested than men (69% and 52%, respectively - Table 46), which can be explained by an issue that arose in the focus group, where men demonstrated to be more uncomfortable asking for help than women, and where it was easy to understand that even though both genders go to the gym to ensure they are healthy, men's enrollment in gyms is more attribute to concerns about their physical appearance.

Concerning the level of education, as we can see in Table 47, less educated people are more interested in this service, also due to them being the ones with the highest percentage of people aged between 40 and 60 and, as we saw before, the increase in age also increases the interest in CGs (Table 48).

Additionally, in order to answer this R.Q., we tried to understand if people who have diseases, physical limitations or already had an injury are those who are more interested in CGs. In fact, we find that the interest demonstrated by these people is higher compared to those that are healthy, however, this differences are not substantial 71% vs 61% for those who have diseases or physical limitations and 66% vs 61% for those who already had an injury (Table 49 and 50, respectively).

In short, our results show that, when launching this service, the main clients will likely be above 40 years old, with a lower educational background and disposable income, mainly women, and that had previously attended the gym, or that had a sedentary lifestyle. In addition, they have a background with injuries and/or diseases that constitute an obstacle to their physical activity and have lack of knowledge of which exercises they shall do.

4.6. Price

To further verify the value that prospective users attribute to CGs, not only in comparison with traditional gyms, but also as an independent service, we gathered information about the respondents' willingness to pay for this new service, as well as about their current spending in exercise-related activities.

As the data gathered was not directly quantifiable, but rather in ranges, we ought to find a methodology through which we could extrapolate the respondents' current expenses. Thus, we decided firstly, to take a more conservative approach and consider the lower end of each range, and then a more optimistic approach, and consider only the upper end of each range.

Our results show that, on average, those that use gyms pay, conservatively, €22.8 monthly, optimistically, €34.5, and, on average, €28.6 (Table 51). When considering the respondents that do not go to the gym, they would be potentially willing to pay between €12.7 and €27.7 monthly (in the conservative and optimistic scenario, respectively), or, on average, €20.2, as per Table 52. These results follow our intuition that those that go to the gym are the ones that attribute to it a higher value, and give strength to the validity of our results.

More than these values, *per se*, we are interested in verifying how they compare with the respondents' willingness to pay for CGs. Following the same method, we can see that the respondents that go to the gym are willing to pay between €30.9 and €38.4 (Table 53), whereas those that do not exercise, showed predisposition to pay between €25.0 and €33.4 (Table 54). These results are reinforced by the 54% of respondents that stated that they would prefer to subscribe to CGs, even if the price was higher (Table 55). We found this result encouraging, and at the same time shows the value that people implicitly identify to this new service, since, as we saw in Table 22, price was CG's characteristic to which consumers attributed the most importance.

Although to a different extent, in both cases respondents show a higher predisposition to pay a premium to benefit from this service, with this premium being higher both in terms of monthly fee and percentage for those that do not exercise. The gym community is willing to pay an extra €6.0 (or 21%) to use this service, whereas the respondents that do not exercise are willing to pay a €9.0 premium (or a relevant 44%). Extrapolating these results (only for those that spend in the gym, as the results should be more accurate), one could say that the regular medical follow-up and tracking is worth, alone, a 21% additional fee over the monthly gym subscription fee.

In short, we can conclude that regardless of whether the respondent exercises in a gym, exists a willingness to pay more for this service than for a traditional gym, which shows the importance and value that respondents attribute to this new service.

4.7. Place

Now, it is important to define where or by whom this service will be provided, according to the key stakeholders' preferences. To define the place, we analyzed both the perspectives of Doctors and end-users. The reason why we have not considered the sports related professionals' opinion, was due to the fact that, in the end, CGs are gyms, regardless of the place in which the service is provided. Thus, we considered that since they are interested in being a Personal Trainer in CGs, the place would not be an issue for them.

Starting, from the consumer's perspective, 78% of the respondents would prefer to attend CGs in gyms, compared to 22% that would prefer it on hospitals (Table 21). These results were unexpected, because, in a first analysis we thought that the majority would prefer to attend this service in hospital, since they would consider it more trustworthy and safe, thus this was another theme discussed in the focus group, and we could clearly understand that the reason behind this was the fact that people unconsciously attribute a negative meaning to trips to the hospital.

Then, after gathering the first preliminary answers to the consumers' survey, and due to the perception above mentioned, in the current and future healthcare professionals' survey, we have included the hypothesis "at a specialized clinic". Our results suggest that 60% of our sample prefers to provide this service in specialized clinics, 23% at gyms and 17% at hospitals, as per Table 56. These results show that unconsciously, also Doctors want to differentiate this service from the ones they are used to provide (at hospitals). Thus, if we had included the option "at a specialized clinic" in end-users' survey, perhaps our conclusions would be different from the ones we got regarding this topic. If we only consider those that are at least somewhat likely to provide this service, 59% prefer do it at specialized clinics, 22% at gyms and 18% at hospital, thus although the percentages are slightly different, the order of preferences are the same, as we can see in Table 57.

When looking at sub-samples divided by professions, all professionals prefer to do it in a specialized clinic, except for the Nurses, which would prefer to provide this service in a gym (Table 58).

Lastly, and as we can see in Table 59, we tried to understand if the place where healthcare professionals seem to be most interested in providing this service is influenced by the place where they work. Surprisingly, we got to the conclusion that the majority of them are not influenced by it, since only 24% of those who work in hospitals (both public and private), prefer the CGs to be in hospitals, while the other 76% are divided between gyms (23%) and clinics (53%). In what

concerns those who work at clinics, 75% of them would be more comfortable providing this service there, with the remaining 25% preferring at gyms.

Although our results point towards our respondents preferring to attend/provide this service at specialized clinics, since we did not consider that possibility in all three surveys, we cannot be entirely sure of such conclusion. Hence, and due to this limitation, we ought to consider the end-users' opinion as being the most relevant, thus choosing to provide this service in a gym.

4.8. Business Plan

In addition to the viability of this business opportunity from the manifestation of interest by the users and providers, the last step is to design a business plan for CGs, which is considered as one of the most important step when planning a new venture (Honig and Karlsson, 2004). As this is not the main scope of this research, the analysis shall be rather simplistic, aiming to see if the numbers add up.

Having in mind that this concept is not yet in use in the market, it is difficult to have a sense on which are the main drivers and costs of setting up the business, thus we mainly considered the "ideal" scenario that our respondents drew, together with the known investment need to open and operate a standard gym (adjusted for the differences with which this service intends to tap the market).

1. Clients

To forecast our clients, we adopted a rather conservative approach. Instead of extrapolating on the existing gym community, we considered only the answers that we obtained. Out of our consumers, 226 mentioned that if this service was available in the market, they would be enrolled, so we considered these as our first clients. Moreover, 142 respondents mentioned that they would almost certainly recommend this service to a family member or friend. Thus, we assumed that each one of these respondents would bring one client to our service. This adds up to the 368 clients we forecast for the first year of activity (Table 60). As it is easier to grow in the beginning of the business, and difficult to maintain the growth in the medium and long-run, we assume that we will be able to grow 90% in the number of subscribers in the 2nd year, and 50%, 30% and 20% between the 3rd and 5th year.

2. Pricing

Although our respondents are willing to pay a premium over traditional gyms to subscribe CGs, we considered starting with a lower price to attract clients. Thus, we decided to start, in the first year with the lower-end of the range of prices that the non-gym users were willing to pay (€25 monthly), and then gradually increase the price up until the €35 per month which corresponds to the average price that current gym users are willing to pay for this service (Table 60).

Clients			
# answers	445	# answers	445
% recommendations	*32%*	% enrolled	51%
Total	**142**	**Total**	**226**
Total			**368**

	Year 1	Year 2	Year 3	Year 4	Year 5
# Subscribers	368	699	1 049	1 363	1 636
Price (monthly)	25,0	27,5	30,0	32,5	35,0
Subscribers annual growth (%)		90%	50%	30%	20%
Annual growth price		2,5 €			
# monthy installments		12			
Annual Revenues	**110 400**	**230 736**	**377 568**	**531 742**	**687 174**

Table 60 – Customers, Revenue and Pricing forecasts

3. Capital and Operational Expenditures

To set up this business, in terms of fixed assets, the main needs lie in finding a space and filling it with the necessary equipment. We did a quick search and found some warehouses with circa 1,500m2 to rent for €5,000, thus we assumed that as our monthly cost for the space. Moreover, we found several estimates that define at €110,000 the initial cost of setting up a gym and considered that as our cost. As the machines tend to depreciate and become obsolete throughout time, we also needed to forecast the need to replace these fixed assets. Thus, as the current accounting lifetime of these equipment is 8 years, we assumed that each year we would need to replace 1 out of 8 machines and, at the end of 8 years, every machine had been substituted.

Initial Investment	
Gym rent (monthly)	5 000
Equipaments purchase	110 000
Annual Replacement of equipaments	13 750

Table 61 – Initial investment needs

4. Marketing expenses

As previously discussed, the degree of interest rose after respondents better understood the concept of CGs. Considering the need of explaining our concept, as well as spread the birth of CGs, we believe it is crucial to invest in our message, through outdoors, flyers, sponsored content in social media, and paid promotion by social media figures. The total expenses forecasted amount to €8,542 per year.

Marketing investment	
Social network publicity	2 000
Posts powered by influencers	2 500
2 outdoors	4 000
Flyers (8000/year)	42
Annual expenditures	8 542

Table 62 – Investment in marketing

5. Personnel

In order to start this venture, we would need to hire staff to work with us, namely Personal trainers, a Doctor, a physiotherapist, and an employee for cleaning and another for the reception. In addition, one of the main features that our respondents would like to use in CGs was the advice from nutritionists. In this sense, we decided to listen to our prospective clients and also include a nutritionist from the beginning of CGs. Moreover, we noticed that, within our Doctor respondents we had some physiotherapists (86%, according to Table 29) that seemed interested in providing their service in CGs. Hence, since having these professionals would not be a must, but rather a plus

of our service, we decided not to include them in the beginning, and introducing this complementary service in the third year.

The staff needed for this business would need to grow as the CGs members also increase, so we forecast to end the 5th year with a headcount of 14 employees, up from the 7 workers we estimate needed to start.

Staff

	Year 1		Year 2		Year 3		Year 4		Year 5	
	#	Salary	#	Salary	#	Salary	#	Salary	#	Salary
Reception	1	900	1	918	1	936	1	955	1	974
PTs	3	1 000	4	1 020	5	1 040	5	1 061	6	1 082
Doctors	1	3 000	2	3 060	2	3 121	2	3 184	3	3 247
Nutritionist	1	1 250	1	1 275	1	1 301	1	1 327	1	1 353
Cleaning	1	700	1	714	1	728	1	743	1	758
Physiotherapist	0	1 150	0	1 173	1	1 196	2	1 220	2	1 245
Annual Personnal Costs	**153 326**		**227 079**		**270 374**		**296 925**		**377 876**	

# salary months	14
Fee SS	23,75%
Salaries annual growth	2,0%

Table 63 – Personnel Expenses

6. External Supplies

Lastly, we estimated the recurring and ongoing costs of operation, such as insurance (forecasted as a percentage of wage workers for the work accidents, and as percentage of capital expenditures for civil liability), utilities (forecasted as a percentage of sales, as the more users the gym has, the more electricity, water and gas is used), laundry (both towels and their cleaning), software needs, and cleaning supplies.

External Suppliers	
Insurance	
Work accidents	2%
Equipment	4%
Utilities	3%
Laundry	6 113
Towels (50/ano)	500
Cleaning (2,57€/kg)	5 613
Softwares and website	4 486
Accounting	486
Website	4 000
Cleaning supplies	1 800

Table 64 – Costs with external suppliers

7. Forecasts

As previously stated, our forecasts aim to be simplistic and parallelly conservative. Our projections were based both on the answers we were able to retrieve from our surveys, and from information available online.

Considering all sales and costs projected, our results suggest that this new venture shall become operationally-, income- and cash-positive within the fourth year of operation, with the capital needed to fund and run the business amounting to €380,000. Moreover, we expect to get the initial investment back during the sixth year of operation.

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues	**110 400**	**230 736**	**377 568**	**531 742**	**687 174**
(-) External Suppliers					
Insurance	(7 467)	(9 492)	(10 907)	(11 988)	(14 158)
Laundry	(6 113)	(12 226)	(18 339)	(24 452)	(30 564)
Software and website	(4 486)	(4 486)	(4 486)	(4 486)	(4 486)
Utilities	(3 312)	(6 922)	(11 327)	(15 952)	(20 615)
Cleaning Supplies	(1 800)	(1 800)	(1 800)	(1 800)	(1 800)
(-) Rent	(60 000)	(60 000)	(60 000)	(60 000)	(60 000)
(-) Personnel	(153 326)	(227 079)	(270 374)	(296 925)	(377 876)
(-) Marketing expenses	(8 542)	(8 542)	(8 542)	(8 542)	(8 542)
Operating Income	**(134 646)**	**(99 810)**	**(8 207)**	**107 597**	**169 133**
(-) Equipment Depreciation	(13 750)	(15 469)	(17 188)	(18 906)	(20 625)
Income before Taxes	**(148 396)**	**(115 279)**	**(25 395)**	**88 690**	**148 508**
(-) Taxes	0	0	0	(19 068)	(31 929)
Net Profit	**(148 396)**	**(115 279)**	**(25 395)**	**69 622**	**116 579**

Capital and Operational Expenditures

	Year 1	Year 2	Year 3	Year 4	Year 5
Initial CapEx needed	110 000				
Additional CapEx		13 750	13 750	13 750	13 750
Total	**110 000**	**13 750**	**13 750**	**13 750**	**13 750**

Cash Flow

Cash Flow	**-244 646**	**-113 560**	**-21 957**	**74 778**	**123 454**
Accumulated cash-Flow	**-244 646**	**-358 206**	**-380 163**	**-305 385**	**-181 931**

Table 65 – Financial forecasts

5. Conclusions, Limitations and Future Work

The simple fact that an opportunity is identified does not directly imply that entrepreneurs should immediately start exploiting it. Thus, this study aimed to evaluate the viability of CGs, both from the perspective of its providers (sports-related professionals and Doctors) and its consumers, as well as start the planning of this new venture, enabling the creation of a more fine-tuned service with a higher propensity to be valuable and durable.

In order to achieve our goal, we resort to three surveys, one aimed at each of the parties involved, as well as a focus group and an appointment simulation. Moreover, we designed a brief financial plan for CGs, to assess the financial viability of this business opportunity.

We were able to gather an aggregate 735 answers to those surveys, in which we relied to study the need of this service, the interest triggered by the new features, and who will be the target of this new service.

Our results suggest that users need, in fact, this service, as 75% of respondents would be interested in having a Doctor counselling their progress in the gym, and there is a significant lack of post-physiotherapy guidance, with 48% of respondents classifying the medical monitoring as non-existing. As per the professionals, 81% of healthcare professionals consider of utmost importance for their patients go through a medical evaluation (at least) before they start to do a new sport or exercise, with this number growing to 88% when we ask the sports-related professionals, thus showing their positive view regarding the need of CGs. Moreover, through the simulation it was easy to conclude the necessity of a service like CGs, once PTs tend to have a straightforward view about the exercises for each pathology while the Doctor proved to be more uncomfortable giving a diagnosis without having all the information about the patient.

In what concerns the interest in this service, the majority of the data collected suggests that there is interest from end-users in this service, as 63% of our prospective consumers considered that they would be very or extremely interested in CGs, and 80% considered the medical monitoring as a relevant feature of this new service. When analyzing professionals, our results showed a higher propensity for medical professionals to engage in this new venture, with 71% showing willingness to provide this service, whereas sports-related professionals' willingness amounted to 66%, being dependent on the age and profession. Thus, we concluded that all parties had joint interest in this service.

When analyzing which would be the characteristics of the users of this service, our evidence suggested that there is a higher propensity for subscribers to be older, with a lower educational background, that had previously suffered physical injuries or have a health limitation that prevents/limits their ability of exercising, and that have little knowledge about which exercises to do. Moreover, our results suggest that the end-users prefer to attend this service in gyms.

Finally, considering the financial plan of CGs, which was based on rather conservative premises, this business opportunity shall be profitable in the fourth year, and any investor shall have its capital retuned by the sixth year.

Notwithstanding, this work has several limitations. Firstly, due to the novelty of the service presented, the Literature Review is virtually non-existing, thus our conclusions were drawn based on the respondent's answers. Second, the number of answers gathered in the 3 surveys, might not be representative of the Portuguese population, especially those about the sports related professionals, which was the survey with the least answers.

Moreover, due to time constraints we were not able to conduct interviews to the different stakeholders involved in this new service, through which we could have gained more market knowledge and valuable insights, especially if we had interviewed PTs and Doctors, because these are the areas in which we have fewer knowledge. Due to this same constraint, the elements of the focus group were known to us, thus they had already heard about this new venture, which might have translated into a positive bias.

Lastly, due to the Doctors' busy schedule, the appointment simulation was realized with a Doctor who is in her first year of internal medicine specialty, which means that she might not yet be the most adequate person for these appointments.

To further extend our work, it would be interesting to conduct interviews to all the stakeholders of CGs, in order to have more insights about the features of this new service, as well as to clarify some of the inconsistent results we obtained, and then develop a more detailed business plan with a defined marketing strategy. Additionally, it would be important to run a pilot with real life cases with the duration needed to measure the impact that this service has on patients/clients. Lastly, we could also study the impact of CGs in other countries.

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Appendix 1 – Tables

Interest on having a doctor to track their progress

	N	%	
1	23	5%	
2	18	4%	
3	70	16%	
4	150	34%	**75,1%**
5	184	41%	
Total	**445**	**100%**	

Table 1 – Interest in CGs prior to its presentation

Follow-up after the physiotherapy

	Very useful	Partially useful	As expected	Useless	Non-existing
Follow-up	18	40	39	12	101
%	**9%**	**19%**	**19%**	**6%**	**48%**

Table 2 – Respondents' perception about the follow-up after physiotherapy

Follow-up during the physiotherapy

	Very useful	Partially useful	Same as expected	Useless	Non-existing
Follow-up	64	84	42	11	9
	30%	40%	20%	5%	4%
out of which					
Need this service? (4 or 5)	47	53	23	9	7
%	**73%**	**63%**	**55%**	**82%**	**78%**

Table 3 – Respondents' perception about the follow-up during physiotherapy

"I don´t feel part of the gym community"

	N	%	
1	15	7%	
2	45	20%	**48%**
3	48	21%	
4	56	25%	
5	38	17%	
6	20	9%	
7	5	2%	
Total	**227**	**100%**	

Table 4 – People that do not go to the gym because do not feel part of the gym community

"I don't know what type of exercises I should do"

	N	%	
1	8	4%	
2	29	13%	**37%**
3	48	21%	
4	49	22%	
5	45	20%	
6	46	20%	
7	2	1%	
Total	**227**	**100%**	

Table 5 – People that do not go to the gym because do not know what type of exercises they should do.

	Interest					
	1	2	3	4	5	
1	0	0	1	5	5	
2	0	0	1	4	6	80%
3	0	0	8	14	5	
4	1	1	2	4	5	
5	0	0	12	7	6	
6	1	1	12	12	8	
7	1	12	23	48	22	

Table 6 – Relationship between people not going to the gym due to a medical condition and their degree of interest in this service.

Diferences between CGs and TGs		
	N	%
Exactly the same	2	0,4%
A little different	31	7,0%
A moderate amount	71	16,0%
A lot different	224	50,3%
Extremely different	117	26,3%
Total	**445**	**100,0%**

Table 7 – Perceived differences between clinical gyms and traditional gyms

		Frequency attending the doctor					
		Less than once a year	Anually	Every 9 months	Semiannualy	Quartly	Monthly
Interest	1	9	4	2	6	3	0
	2	5	11	3	8	2	0
	3	29	46	4	20	9	2
	4	28	75	8	56	21	2
	5	15	37	8	18	8	6

Table 8 – Relationship between the frequency with which respondents' go to the doctor and the interest demonstrated by them in CGs (1= Not interested at all and 5= extremely interested).

		Interest				
		1	2	3	4	5
Sedentarism	1	0	3	6	8	3
	2	6	9	24	33	13
	3	5	10	50	75	40
	4	13	6	27	62	29
	5	0	1	3	12	7
	% of 4 and 5, for those who have a sedentary lifestyle				54%	

Table 9 – Relationship between respondents' lifestyle and the interest demonstrated in CGs. (1 = sedentary lifestyle and 5 = active lifestyle)

Used to monitor people with physical limitations		
	N	%
Yes	40	56%
No	32	44%
Total	**72**	**100%**

Table 10 – Sports related professionals that are used to monitor people with physical limitations

Importance of medical appointments before exercising		
	N	%
Extremely important	63	88%
Very important	8	11%
Moderately important	1	1%
Slightly important	0	0%
Not at all important	0	0%
Total	**72**	**100%**

Table 11 – Sports related professionals' perception about the importance of people going to medical appointments before start exercising.

Advantageous for patients		
	N	%
1	0	0%
2	0	0%
3	2	3%
4	14	19%
5	56	78%
Total	72	100%
Average	4,75	

Table 12 – Sports related professionals' perception about the advantages that CGs can bring to their clients

"I would be much more confident providing this service"		
	N	%
Strongly agree	34	47%
Somewhat agree	35	49%
Neither agree nor disagree	3	4%
Somewhat disagree	0	0%
Strongly disagree	0	0%
Total	72	100%

Table 13 – Sports related professionals' increased confidence providing this service

"I think clients would trust me more"		
	N	%
Strongly agree	26	36%
Somewhat agree	34	47%
Neither agree nor disagree	11	15%
Somewhat disagree	1	1%
Strongly disagree	0	0%
Total	72	100%

Table 14 – Sports related professionals' perception about the clients trusting them

	Extremely important	Very Important	Moderately important	Slightly important	Not important at all	% of extremely and very important)
Doctors	26	15	6	1	0	85%
Nurse	16	12	2	0	0	93%
Medical Student	31	34	22	2	0	73%
Physiotherapist	18	18	6	0	0	86%
Other	4	3	2	0	0	78%
%	44%	38%	17%	1%	0%	

Table 15 – Current and future healthcare professionals' perception about the importance of people going to medical appointments before start exercising

Healthcare professionals advice		
	N	%
Never	38	29%
Sometimes	44	34%
About half the time	42	32%
Most of the time	4	3%
Always	2	2%
Total	130	100%

Table 16 – Regularity with which healthcare professionals (excluding medical students) are consulted by people before start exercising

Advantageous for patient		
	N	%
1	7	3%
2	5	2%
3	18	8%
4	77	35%
5	111	51%
Total	218	100%
Average	4,28	

Table 17 – Current and future healthcare professional's perception about the advantages that CGs can bring to their patients

Importance of regular follow up appointments			
	N	%	
Not important at all	0	0%	
Slightly important	2	1%	
Moderately important	5	2%	
Very important	121	56%	97%
Extremely important	90	41%	
Total	218	100%	

Table 18 – Current and future healthcare professionals' perception about the importance of people having regular follow up appointments.

Interest			
	N	%	
1	24	5%	12%
2	29	7%	
3	110	25%	
4	190	43%	63%
5	92	21%	
Total	445	100%	

Table 19 – Interest demonstrated by end-users

		Enrolled?				
		Definitely yes	Probably yes	Might or might not	Probably not	Definitely not
Interest	1	0	0	0	8	16
	2	0	3	4	17	5
	3	1	18	68	18	5
	4	8	113	62	6	1
	5	40	44	6	1	1
	Truly interested	73%				

Table 20 – People that would be enrolled in CGs, if the service was already available in the market

		Interest					%	
		1	2	3	4	5	Total	4 or 5
Place	Gym	21	26	78	152	67	77%	78%
	Hospital	3	3	32	38	25	23%	22%

Table 21 – Place where people have demonstrated more interest

	Nutricionist	Classes	App	Regular medical appointments	Equipments	Extras	Location	Price
5 - Extremely important	33%	17%	24%	29%	24%	6%	29%	39%
Very important	47%	35%	46%	52%	39%	20%	49%	44%
Moderately important	18%	36%	23%	18%	29%	47%	18%	16%
Slightly important	2%	8%	6%	1%	6%	22%	2%	1%
1 - Not important at all	0%	4%	1%	1%	2%	5%	0%	0%
Extremely or Very important	80%	52%	70%	81%	63%	26%	79%	82%

Table 22 – Most important features for consumers

CGs' characterization		
	N	%
Innovative	232	52%
Important	218	49%
Safe	217	49%
Trustworthy	169	38%
Supportive	168	38%
Encouraging	122	27%
Optimist/Positive	91	20%
Different	91	20%
Premium	65	15%
Unique	31	7%
Accessible	16	4%
Disruptive	12	3%
Other	8	2%

Table 23 – Consumers' perceived characteristics of CGs

	Willingness					
	1	2	3	4	5	%
Less than 20	1	0	3	2	0	**33%**
20-30	1	3	10	15	14	**67%**
31-40	0	1	4	3	6	**64%**
41-50	1	0	0	1	3	**80%**
51-60	0	0	0	1	2	**100%**
More than 60	1	0	0	0	0	**0%**

Table 25 – Relationship between the age and the willingness demonstrated by the professionals to provide this new service.

	Willingness					
	1	2	3	4	5	%
Female	3	1	8	8	11	61%
Male	1	3	9	14	14	68%

Table 27 – Relationship between respondents' gender and the willingness demonstrated by them to provide this new service

Willingness to provide			
	N	%	
1	4	6%	
2	4	6%	
3	17	24%	
4	22	31%	**65%**
5	25	35%	
Total	**72**	**100%**	

Table 24 – Sports related professional's willingness to provide this service

	Willingness					
	1	2	3	4	5	%
Coach	0	1	2	2	3	**63%**
Personal Trainer	1	0	3	9	8	**81%**
Physical Education teacher	2	1	3	2	7	**60%**
Unemployed	1	1	6	5	4	**53%**
Other	0	1	3	4	3	**64%**

Table 26 – Relationship between the respondents' profession and the willingness demonstrated by them to provide this new service

	Willingness					
	Extremely likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Extremely unlikely	%
Doctors	11	23	4	9	1	71%
Nurse	7	16	1	6	0	77%
Medical Student	13	47	8	16	5	67%
Physiotherapist	9	27	0	3	3	86%
Other	0	5	1	2	1	56%

Table 28 – Relationship between respondents' profession and the willingness demonstrated by them to provide this new service (grouped)

	Willingness					
	Extremely likely	Somewhat likely	Neither likely nor	Somewhat unlikely	Extremely unlikely	%
Physiatrist	5	7	2	2	0	**75%**
Orthopedist	2	1	1	0	0	**75%**
Pediatrician	1	5	0	1	1	**75%**
Internal Medicine	1	5	1	4	0	**55%**
Cardiologist	2	0	0	0	0	**100%**
Medical Student	13	47	8	16	5	**67%**
Nurse	7	16	1	6	0	**77%**
Other	0	5	1	2	1	**56%**
Physiotherapist	9	27	0	3	3	**86%**
General and Family Medicine	0	5	0	2	0	**71%**

Table 29 – Relationship between respondents' profession and the willingness demonstrated by them to provide this new service (detailed)

	Willingness					
	Extremely likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Extremely unlikely	% of extremely and somewhat likely
Public Hospital	5	21	4	9	0	**67%**
Private Hospital	8	11	0	1	1	**90%**
Other	1	6	0	2	0	**78%**
Clinic	6	13	0	0	3	**86%**

Table 31 – Relationship between doctors' workplace and the willingness to provide this new service.

	Willingness					
	Extremely likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Extremely unlikely	% of Extremely and Somewhat likely
Female	26	70	10	21	8	**71%**
Male	7	27	2	7	1	**77%**

Table 33 – Relationship between respondents' gender and the willingness to provide this new service.

		Willingness					
		Extremely likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Extremely unlikely	%
Important for you as a doctor	**1**	3	3	0	2	5	**54%**
	2	0	1	2	2	0	**40%**
	3	4	26	6	8	1	**20%**
	4	5	28	3	10	3	**27%**
	5	21	39	1	6	0	**9%**
							51%

Table 30 – Relationship between respondents' perceived importance for them and the willingness to provide this new service

	Willingness					
	Extremely likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Extremely unlikely	% of extremely and somewhat
Less than 20	5	13	2	4	1	**72%**
20-30	20	59	8	19	7	**70%**
31-40	2	17	2	4	1	**73%**
41-50	5	2	0	1	0	**88%**
51-60	1	2	0	0	0	**100%**
Older than 70	0	1	0	0	0	**100%**

Table 32 – Relationship between respondents' age and the willingness to provide this new service.

		Satisfaction with a doctor monitoring					
		Not satisfied at all	Partially dissatisfied	Moderatedly satisfied	Satisfied	Extremely satisfied	% of Satisfied and Extremely Satisfied
Age	**Less than 20**	0	0	7	28	24	**88%**
	21-30	1	4	20	77	68	**85%**
	31-40	0	0	5	15	26	**89%**
	41-50	0	1	6	29	44	**91%**
	51-60	0	1	8	31	32	**88%**
	61-70	0	0	1	8	6	**93%**
	Older than 70	0	0	0	2	1	**100%**

Table 34 – Relationship between respondents' age and the satisfaction in having a doctor tracking their progress.

		Satisfaction with a doctor monitoring					
		Not satisfied at all	Partially dissatisfied	Moderatedly satisfied	Satisfied	Extremely satisfied	% of Satisfied and Extremely Satisfied
Gender	Male	0	2	19	74	52	86%
	Female	1	4	28	116	149	89%

Table 35 – Relationship between respondents' gender and the satisfaction demonstrated in having a doctor tracking their progress

		Frequency attending the doctor					
		Less than once a year	Anually	Every 9 months	Semiannualy	Quartly	Monthly
Importance of regular medical appointments	5 - Extremely important	21	50	6	31	15	6
	Very important	42	90	15	59	21	3
	Moderately important	20	32	3	17	7	1
	Slightly important	2	0	1	0	0	0
	1 - Not important at all	1	1	0	1	0	0

Table 36 – Relationship between attending the doctor and perceived importance of regular medical appointments

		Interest						
		1	2	3	4	5	% of 4 and 5	Average
Exercise?	Yes	13	11	51	94	49	66%	3,71
	No	11	18	59	96	43	61%	3,63

Table 37 – Relationship between respondents' exercising habits and the interested in CGs

		Interest						
		1	2	3	4	5	% of 4 and 5	Average
Gym?	No	16	22	89	136	63	61%	3,64
	Yes	8	7	21	54	29	70%	3,75

Table 38 – Relationship between respondents' subscription to gyms and the interest in CGs. (0= do not go to the gym and 1= go to the gym)

		Interest				
		1	2	3	4	5
Don't have time	1	8	8	28	47	15
	2	2	7	20	23	11
	3	0	2	6	10	8
	4	0	1	5	9	4
	5	0	0	0	5	2
	6	0	0	0	1	0
	7	1	0	0	1	3
	% of 4 and 5	82%				

Table 39 – Relationship between respondents' lack of time to exercise and the interest in CGs.

		Interest				
		1	2	3	4	5
Don't like exercise	1	2	7	19	28	16
	2	4	2	7	13	2
	3	0	1	3	12	1
	4	0	0	8	8	2
	5	0	2	8	6	5
	6	3	1	7	19	6
	7	2	5	7	10	11
	% of 4 and 5	52%				

Table 40 – Relationship between respondents' lack of joy to exercise and the interest in CGs.

		Interest				
		1	2	3	4	5
Don't know exercises	1	0	1	1	4	2
	2	1	0	7	12	9
	3	3	4	14	15	12
	4	5	6	12	22	4
	5	2	4	8	24	7
	6	0	3	16	19	8
	7	0	0	1	0	1
	% of 4 and 5	39%				

Table 41 – Relationship between respondents' lack of knowledge about the exercises and the interest in CGs.

		Interest				
		1	2	3	4	5
Medical Condition	1	0	0	3	4	4
	2	0	0	2	4	5
	3	0	3	7	13	4
	4	2	3	2	2	4
	5	0	2	9	9	5
	6	4	3	6	15	6
	7	5	7	30	49	15
	% of 4 and 5	24%				

Table 42 – Relationship between respondents' physical limitations and the interest demonstrated in CGs.

		Interest				
		1	2	3	4	5
Not gym community	1	1	2	4	5	3
	2	1	5	11	21	7
	3	3	4	10	22	9
	4	2	3	17	25	9
	5	3	4	10	13	8
	6	0	0	6	8	6
	7	1	0	1	2	1
	% of 4 and 5	48%				

Table 43 – Relationship between respondents' sense of belonging to the gym community and the interest demonstrated in CGs.

		Enrolled?				
		Definitely not	Probably not	Might or might not	Probably yes	Definitely yes
Sedentarism	1	2	2	5	8	3
	2	6	16	33	23	7
	3	6	18	62	74	20
	4	14	13	36	59	15
	5	0	1	4	14	4
	% of 4 and 5, for those who have a sedentary lifestyle	39%				

Table 44 – Relationship between respondents' lifestyle and the interested demonstrated in being enrolled in CGs. (1 = sedentary lifestyle and 5 = active lifestyle)

		Age						
		Less than 20	21-30	31-40	41-50	51-60	61-70	Older than 70
Interest	1	3	14	2	2	3	0	0
	2	4	17	3	4	1	0	0
	3	19	41	10	18	18	4	0
	4	28	62	16	42	35	6	1
	5	5	36	15	14	15	5	2
	% of 4 and 5	56%	58%	67%	70%	69%	73%	100%

Table 45 – Relationship between respondents' age and the interest demonstrated in CGs.

		Gender	
		Female	Male
Interest	1	12	12
	2	15	14
	3	65	45
	4	137	53
	5	69	23
	% of 4 and 5	69%	52%

Table 46 – Relationship between consumers' gender and the interest demonstrated in CGs.

		Interest					
		1	2	3	4	5	% of 4 and 5
School degree	Less than high school	1	2	4	16	10	**79%**
	High School	4	5	36	58	26	**65%**
	Bachelor's	11	14	47	73	28	**58%**
	Master's	7	8	23	42	28	**65%**
	PhD	1	0	0	1	0	**50%**

Table 47 – Relationship between consumers' school degree and the interest demonstrated in CGs.

		School Degree					
		Less than high school	High School	Bachelor's	Master's	PhD	% of less than high school and high school
Age	Less than 20	2	35	22	0	0	**29%**
	21-30	1	16	77	76	0	
	31-40	4	16	11	14	1	
	41-50	11	31	30	7	1	**51%**
	51-60	11	25	26	10	0	
	61-70	4	4	6	1	0	
	Older than 70	0	2	1	0	0	

Table 48– Relationship between consumers' age and school degree.

		Interest					
		1	2	3	4	5	% of 4 and 5
Diseases?	Yes	5	4	21	44	30	**71%**
	No	19	25	89	146	62	**61%**

Table 49 – Relationship between consumers' interest in CGs and their illness history.

		Interest					
		1	2	3	4	5	% of 4 and 5
Injury?	Yes	7	12	53	88	50	**66%**
	No	17	17	57	102	42	**61%**

Table 50 – Relationship between consumers' interest in CGs and their injuries history.

Price paid by gym members		Conservative	Optimistic	
Less than 20	40	0 €	19 €	
20-30	59	20 €	29 €	
31-40	22	30 €	39 €	
41-50	13	40 €	49 €	
51-60	4	50 €	59 €	
61-70	7	60 €	69 €	
More than 70	7	70 €	79 €	
Total	**152**	**22,83**	**34,46**	**Average 1**
		28,64		**Average 2**

Table 51 – Breakdown and estimate of price paid by gym users

Willingness to pay if enrolled in a gym		Conservative	Optimistic	
Less than 25€	125	0	24	
25€-30€	71	25	29	
31€-35€	14	30	34	
36€-40€	6	35	39	
41€-45€	5	40	44	
46€-50€	4	45	49	
51€-55€	2	50	54	
Total	**227**	**12,71**	**27,72**	**Average 1**
		20,22		**Average 2**

Table 52 – Breakdown and estimate of the potential price paid by those that are not gym members

Willingness to pay for CGs		Conservative	Optimistic	
Less than 25	23	0 €	24 €	
[25-30[	40	25 €	29 €	
[30-35[	27	30 €	34 €	
[35-40[	13	35 €	39 €	
[40-45[	13	40 €	44 €	
[45-50[	11	45 €	49 €	
[50-55[	10	50 €	54 €	
[55-60[	4	55 €	59 €	
[60-65[	4	60 €	64 €	
More than 65	7	65 €	80 €	
Total	**152**	**30,89**	**38,42**	**Average 1**
		34,65		**Average 2**

Table 53 – Breakdown and estimate of the potential price paid to subscribe to CGs for those that are gym users.

Willingness to pay for CGs		Conservative	Optimistic	
Less than 25	49	0	24	
[25-30[	69	25	29	
[30-35[	52	30	34	
[35-40[	20	35	39	
[40-45[	14	40	44	
[45-50[	12	45	49	
[50-55[	5	50	54	
[55-60[	4	55	59	
[60-65[	1	60	64	
More than 65	1	65	80	
Total	**227**	**25,02**	**33,39**	**Average 1**
		29,20		**Average 2**

Table 54 – Breakdown and estimate of the potential price paid to subscribe to CGs for those that are not gym users.

Sensitivity to pricing		
	N	**%**
Clinical Gym	241	54%
Traditional Gym	204	46%
Total	**445**	**100%**

Table 55 – Preference if the price of CGs was higher than TGs

Place	N	%
In an hospital	37	17%
At a specialized clinic	131	60%
At the gym	50	23%
Total	**218**	**100%**

Table 56 – Current and future healthcare professionals' preferred place to provide this service.

		In an hospital	At a specialized clinic	At the gym
Willingness to provide this service	Extremely likely	9	26	5
	Somewhat likely	20	68	30
	Neither likely nor unlikely	3	8	3
	Somewhat unlikely	3	25	8
	Extremely unlikely	2	4	4
	% of Extremely and Somewhat likely	18%	59%	22%

Table 57 – Relationship between respondents' willingness to provide this service and the place where they prefer to provide it.

	In an hospital	At a specialized clinic	At the gym
Doctors	27%	50%	23%
Nurse	30%	33%	37%
Medical Student	16%	62%	22%
Physiotherapist	0%	86%	14%
Other	11%	67%	22%

Table 58 – Relationship between respondents' profession and the place where they prefer to provide it.

	In an hospital	At a specialized clinic	At the gym
Hospital (public and private)	24%	53%	23%
Clinic	0%	75%	25%
Other	0%	73%	27%
%	**18%**	**58%**	**24%**

Table 59 – Relationship between respondents' workplace and the place where they prefer to provide it.

Appendix 2 - Surveys

Consumers

Start of Block: Default Question Block

Dear participant,
Thank you for accepting the challenge to take part in this survey. This questionnaire is part of the research for my master thesis. It will take you 6-7 minutes.
There are no right or wrong answers and all the collected information is anonymous. It will be used exclusively for the purpose of this research and will be kept strictly confidential.
Your contribution is very valuable. Thank you for your time and participation!

Page Break

Q2 **Healthcare Habits**
In this section, you will be asked about your healthcare habits. Please answer sincerely.

Page Break

Q1 How often do you go to the doctor?

- Monthly (1)
- Quartly (2)
- Semiannualy (3)
- Every 9 months (4)
- Anually (5)
- Less than once a year (6)

Page Break

Q2 Do you have any disease or physical limitation?

- Yes (1)
- No (2)

Page Break

Display This Question:
If Do you have any disease or physical limitation? = Yes

Q3 Which type of disease do you have? (you can choose more than one option)

- Mental (1)
- Chronic (2)
- Physical (3)
- Other (4)

Page Break

Display This Question:

If Which type of disease do you have? (you can choose more than one option) = Chronic
Or Which type of disease do you have? (you can choose more than one option) = Physical

Q4 Please, specify (you can select more than one option)

- [ ] Diabetes (1)
- [ ] Epilepsy and seizures (2)
- [ ] Obesity (3)
- [ ] Oral health problems (4)
- [ ] Arthritis (5)
- [ ] Cancer (6)
- [ ] Cardiovascular (7)
- [ ] Asthma (8)
- [ ] Other (9)

_____

Page Break

Q10 Have you ever had any injury?

- ○ Yes (1)
- ○ No (2)

Display This Question:
If Have you ever had any injury? = Yes

Q12 Where was your injury? (you can select more than one option)

- [ ] Muscle (1)
- [ ] Bone (2)
- [ ] Ligaments (3)
- [ ] Sinews (4)
- [ ] Joint (5)

Page Break

Q14 Did you ever had to do physical therapy?

- ○ Yes (1)
- ○ No (2)

Page Break

Display This Question:
If Did you ever had to do physical therapy? = Yes

Q15 How do you evaluate your experience in which concerns the **outcome:**

- ○ I got worse (1)
- ○ I got a little worse (2)
- ○ It had no improvement (3)
- ○ I improved a little (4)
- ○ I got healed (5)

Display This Question:
If Did you ever had to do physical therapy? = Yes

Q16 How do you evaluate your experience in which concerns the **recovery time:**

- Very slow (1)
- Slower than expected (2)
- Same as expected (3)
- Faster than expected (4)
- Very fast (5)

Display This Question:
If Did you ever had to do physical therapy? = Yes

Q17 How do you evaluate your experience in what concerns the **home/gym exercises recommended by the physiotherapist:**

- Very hard to do/understand (1)
- Hard to do/understand (2)
- They were fine (3)
- Easy to do/understand (4)
- Very easy to do/understand (5)

Page Break

Display This Question:
If Did you ever had to do physical therapy? = Yes

Q18 How do you evaluate your experience in what concerns the **follow up during physiotherapy** (i.e. the advice given by the therapist on what you should or should not do)**:**

- Non-existing (1)
- Useless (2)
- Same as expected (3)
- Partially useful (4)
- Very useful (5)

Display This Question:
If Did you ever had to do physical therapy? = Yes

Q19 How do you evaluate your experience in what concerns the **follow up after the physiotherapy** (i.e. the advice given by the therapist on what you should or should not do)**:**

- Non-existing (1)
- Useless (2)
- As expected (3)
- Partially useful (4)
- Very useful (5)

Page Break

Q21 **Physical Evaluation**

In this section, you will evaluate your physical habits.
Please, be honest while answering.

Page Break

Q24 From 1 to 5, how do you evaluate your lifestyle? (being 1 = sedentary and 5 = very active)

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)

Q25 Do you usually exercise?

- Yes (1)
- No (2)

Page Break

Display This Question:

If Do you usually exercise? = Yes

Q27 How many times, **per week**?

- less than once per week (1)
- 1-2 times per week (2)
- 3-4 times per week (3)
- more than 4 times per week (4)

Display This Question:
If Do you usually exercise? = Yes

Q26 Where do you exercise? (You can select more than one)

- Gym (1)
- Outdoor (2)
- At home (3)
- Team sports (4)
- Other (5) _____

Display This Question:
If Where do you exercise? (You can select more than one) = Gym
Or Where do you exercise? (You can select more than one) = Team sports

Q28 How much do you pay, in euros, **per month?**

- <20 (1)
- 20-30 (2)
- 31-40 (3)
- 41-50 (4)
- 51-60 (5)
- 61-70 (6)
- >70 (7)

Page Break

Display This Question:

If Do you usually exercise? = Yes

Q29 How often do you check with your doctor if the exercises/sports that you are doing are harmful for your health/physical condition?

- Never (1)
- Rarely (2)
- Sometimes (3)
- Often (4)
- Very often (5)

Page Break

Display This Question:
If Do you usually exercise? = No

Q30 Why? (Order, from 1 to 7, in which 1 is the main reason for you not to exercise and 7 is the less important reason)

_____ I don't like exercising (1)
_____ I don't have time to exercise (2)
_____ I have a medical condition that prevents me to exercise (3)
_____ I don't feel part of the "gym community" (4)
_____ I consider it expensive (5)
_____ I don't know what type of exercises I should do (6)
_____ I don't have any gym near my home/work/school (7)

Page Break

Display This Question:

If Do you usually exercise? = No

Q31 If you were enrolled in a gym, how much would you be willing to pay, in euros, **per month**?

- <25€ (1)
- 25€-30€ (2)
- 31€-35€ (3)
- 36€-40€ (4)
- 41€-45€ (5)
- 46€-50€ (6)
- 51€-55€ (7)
- 56€-60€ (8)
- 61€-65€ (9)
- > 65€ (10)

Page Break

Display This Question:

If Where do you exercise? (You can select more than one) = Gym

Q32 Select the features that you value most in gyms (you can select more than one)

- [ ] Quality of the equipments (1)
- [ ] Variety of the equipments (2)
- [ ] Classes (3)
- [ ] Schedule (4)
- [ ] PT (5)
- [ ] Nutritionist (6)
- [ ] Changing room's conditions (7)
- [ ] Location (8)
- [ ] Price (9)
- [ ] Staff available to help when needed (10)
- [ ] Family packs (11)
- [ ] Extras (pool, jacuzzi, massage) (12)

Display This Question:
If Where do you exercise? (You can select more than one) != Gym

Q61 If you were enrolled in the gym, which features would you value most (you can select more than one)

- [ ] Quality of the equipments (1)
- [ ] Variety of the equipments (2)
- [ ] Classes (3)
- [ ] Schedule (4)
- [ ] PT (5)
- [ ] Nutritionist (6)
- [ ] Changing room's conditions (7)
- [ ] Location (8)
- [ ] Price (9)
- [ ] Staff available to help when needed (10)
- [ ] Family packs (11)
- [ ] Extras (pool, jacuzzi, massage) (12)

Page Break

Q33 Now, let's suppose that, besides the Personal Trainer, a gym would also had a doctor to define your training plan and follow up on your progress, allowing you to achieve your physical goals, while ensuring that you are not compromising your health.
From 1 to 5, how interested would you be in this service? (being 1 = not interested at all and 5 = extremely interested)

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)

Page Break

Q35 Imagine that this service, **a Clinical Gym**, came up in the market.
A Clinical Gym, combines your fitness objectives with your health limitations, thus you can design a more tailored plan and exercises, *vis a vis* traditional gyms.
The idea of these **Clinical Gyms** is to combine the medical evaluation performed by a doctor with the elaboration of a training plan made by a personal trainer, which is adapted to your needs and aspirations.
The usage of the joint know-how of both professionals should have synergies, since both the Doctor and the Personal Trainer would be in permanent contact, thus reducing the amount of information lost, while allowing an optimization of the exercises performed, enabling you to achieve your fitness objectives with the minimum impact on your health.

Page Break

Q37 How would you rate your satisfaction with a service where you knew your physical goals would always be monitored by a doctor?

- Not satisfied at all (1)
- Partially dissatisfied (2)
- Moderatedly satisfied (3)
- Satisfied (4)
- Extremely satisfied (5)

Page Break

Q38 How do you characterize this service? (You can select more than one option)

- [ ] Innovative (1)
- [ ] Encouraging (2)
- [ ] Safe (3)
- [ ] Disruptive (4)
- [ ] Important (5)
- [ ] Unique (6)
- [ ] Premium (7)
- [ ] Supportive (8)
- [ ] Different (9)
- [ ] Accessible (10)
- [ ] Trustworthy (11)
- [ ] Optimist/Positive (12)
- [ ] Other (13) _____

Page Break

Q39 If this service was available today in the market, would **you be enrolled**?

- Definitely not (1)
- Probably not (2)
- Might or might not (3)
- Probably yes (4)
- Definitely yes (5)

Q40 If this service was available today in the market, how likely would it be for you to **recommend it to a family/friend**?

- 0 (0)
- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- 7 (7)
- 8 (8)
- 9 (9)
- 10 (10)

Page Break

Q41 From 1 to 5, classify your **degree of interest** in this service (1 = Not interested and 5= extremely interested)

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)

Q42 From 1 to 5, how much do you consider **necessary** this service (1= unnecessary and 5 = Extremely necessary

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)

Q43 How much do you consider this service different from traditional gyms?

- Exactly the same (1)
- A little different (2)
- A moderate amount (3)
- A lot different (4)
- Extremely different (5)

Page Break

Q44 Rate, from 1 to 5, how important do you consider the following services for Clinical Gyms:

	1 - Not important at all (1)	Slightly important (2)	Moderately important (3)	Very important (4)	5 - Extremely important (5)
Nutritionist (1)	○	○	○	○	○
Classes (2)	○	○	○	○	○
An app where you can check doctor's and PT's reports (3)	○	○	○	○	○
Regular medical appointments for performance evaluation (4)	○	○	○	○	○
Equipments (5)	○	○	○	○	○
Extras (sauna, jacuzzi, pool, massage) (6)	○	○	○	○	○
Location (7)	○	○	○	○	○
Price (8)	○	○	○	○	○

Page Break

Q45 In which of the following facilities, would you feel safer to attend to this service?

- ○ Hospital (1)
- ○ Gym (2)

Page Break

Q46 Imagine, that the price of Clinical Gym was the **same** as a traditional gym.
Which one would you prefer?

- ○ Clinical Gym (1)
- ○ Traditional Gym (2)

Page Break

Q48 Imagine, that the price of Clinical Gym was more **expensive** than a traditional gym.
Which one would you prefer?

- ○ Clinical Gym (1)
- ○ Traditional Gym (2)

Q49 Which price, per month, do you consider fair for Clinical Gyms?

- ○ <25 (1)
- ○ [25-30[(2)
- ○ [30-35[(3)
- ○ [35-40[(4)
- ○ [40-45[(5)
- ○ [45-50[(6)
- ○ [50-55[(7)
- ○ [55-60[(8)
- ○ [60-65[(9)
- ○ >65 (10)

Page Break

Q50 **Demographic Data**
It is almost over!
I remind you, again, that all answers are anounimous. Thus, you can continue being honest.

Page Break

Q54 Gender

- ○ Male (1)
- ○ Female (2)

Q52 Age

- ○ <20 (1)
- ○ 21-30 (2)
- ○ 31-40 (3)
- ○ 41-50 (4)
- ○ 51-60 (5)
- ○ 61-70 (6)
- ○ >70 (7)

Q53 Nationality

- ○ Portuguese (1)
- ○ German (2)
- ○ Italian (3)
- ○ French (4)
- ○ Spanish (5)
- ○ Other (6) _____

Page Break

Q55 School degree

- Less than high school (1)
- High School (2)
- Bachelor's (3)
- Master's (4)
- PhD (5)

Q56 Do you have health insurance?

- Yes (1)
- No (2)

Q57 How much is your **yearly** household income?

- Less than €10,000 (1)
- €10,000 - €19,999 (2)
- €20,000 - €29,999 (3)
- €30,000 - €39,999 (4)
- €40,000 - €49,999 (5)
- More than €50,000 (6)

Page Break

End of Block: Default Question Block

Healthcare Professionals

Dear participant,
Thank you for accepting the challenge to take part in this survey. This questionnaire is part of the research for my master thesis. It will take you less than 5 minutes.
There are no right or wrong answers and all the collected information is anonymous. It will be used exclusively for the purpose of this research and will be kept strictly confidential.
Your contribution is very valuable. Thank you for your time and participation!

Page Break

Q1 Age

- < 20 (1)
- 20-30 (2)
- 31-40 (3)
- 41-50 (4)
- 51-60 (5)
- 61-70 (6)
- > 70 (7)

Q2 Gender

- Male (1)
- Female (2)

Q3 Profession

- Physiatrist (1)
- Physiotherapist (2)
- Nurse (3)
- Cardiologist (4)
- Pediatrician (5)
- Orthopedist (6)
- Neurologist (8)
- Medical Student (9)
- Internal Medicine (10)
- General and Family Medicine (11)
- Other (12) _____

Display This Question:

If Profession != Medical Student

Q4 Where do you work?

- Public Hospital (1)
- Private Hospital (2)
- Clinic (3)
- Other (4) _____

Q5 How important do you consider your patients undergoing a physical evaluation before start exercising?

- Extremely important (1)
- Very important (2)
- Moderately important (3)
- Slightly important (4)
- Not at all important (5)

Page Break

Display This Question:

If Profession != Medical Student

Q6 Is it usually for patients to get advice from you **before** starting any sport/exercise? (Rate from 1 to 5)

- Never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always (5)

Page Break

Display This Question:

If Profession != Medical Student

Q7 Is it often for you to advise patients not to do certain exercises/sports due to any physical condition/limitation they have?

- Never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always (5)

Page Break

Display This Question:

If Profession != Medical Student

And Is it often for you to advise patients not to do certain exercises/sports due to any physical con... != Never

Q8 Is it usual for patients to go back to see if the exercises they are doing are affecting their physical condition?

- Never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always (5)

Page Break

Imagine that a new service, **a Clinical Gym**, came up in the market.
A Clinical Gym, combines the patient's fitness objectives with his health limitations, thus having a more tailored plan of exercises, *vis a vis* traditional gyms.
The idea of these **Clinical Gyms** is to combine the medical evaluation performed by a doctor/therapist with the elaboration of a training plan made by a personal trainer, which is adapted to the patient's needs and aspirations.
The usage of the joint know-how of both professionals should have synergies, since both the Doctor/therapist and the Personal Trainer would be in permanent contact, thus reducing the amount of information lost, while allowing an optimization of the exercises performed, enabling you to achieve your fitness objectives with the minimum impact on your health.
When compared with the usual functions of the medical staff, the only difference would be the communication with the Personal Trainer, while designing the clients' training plans and adapted exercises.

Page Break

Q9 From 1 to 5, how much do you consider this service advantageous **for patients**? (being 1= Not advantageous at all and 5= Extremely advantageous)

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)

Q10 From 1 to 5, how much do you consider this service advantageous for you as a doctor? (being 1= Not advantageous at all and 5= Extremely advantageous)

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)

Page Break

Q11 From 1 to 5, how much do you consider that your hospital/clinic/workplace would benefit from providing this service? (In which 1 = irrelevant for your hospital and 5 = your hospital could benefit a lot by providing this service)

(1) ☆ ☆ ☆ ☆ ☆

Page Break

Q12 How would you classify **Clinical Gyms**? (You can select more than one option)

- ☐ Innovative (1)
- ☐ Safe (2)
- ☐ Encouraging (3)
- ☐ Disruptive (4)
- ☐ Important (5)
- ☐ Unique (6)
- ☐ Premium (7)
- ☐ Supportive (8)
- ☐ Different (9)
- ☐ Accessible (10)
- ☐ Trustworthy (11)
- ☐ Optimist/Positive (12)

Page Break

Q13 How important do you consider a regular follow up appointment, in order to understand if patients aren't compromising their health with the exercises they are doing?

- ○ Extremely important (1)
- ○ Very important (2)
- ○ Moderately important (3)
- ○ Slightly important (4)
- ○ Not at all important (5)

Q14 Rate your **willingness to provide this service** (i.e. to have regular follow up appointments with your patients and together with a personal trainer, build the best training plan for each patient):

- ○ Extremely likely (1)
- ○ Somewhat likely (2)
- ○ Neither likely nor unlikely (3)
- ○ Somewhat unlikely (4)
- ○ Extremely unlikely (5)

Page Break

Display This Question:

If Rate your willingness to provide this service (i.e. to have regular follow up appointments with y... != Extremely unlikely

Q15 Where would you be most interested/motivated/confident in providing this service?

- In an hospital (1)
- At a specialized clinic (2)
- At the gym (3)

End of Block: Default Question Bloc

Sports Related Professionals

Start of Block: Default Question Block

Dear participant,
Thank you for accepting the challenge to take part in this survey. This questionnaire is part of the research for my master thesis. It will take you less than 5 minutes.
There are no right or wrong answers and all the collected information is anonymous. It will be used exclusively for the purpose of this research and will be kept strictly confidential.
Your contribution is very valuable. Thank you for your time and participation!

Page Break

Q2 Age

- <20 (1)
- 20-30 (2)
- 31-40 (3)
- 41-50 (4)
- 51-60 (5)
- > 60 (6)

Q3 Gender

- Male (1)
- Female (2)

Q5 Are you currently working?

- Yes (1)
- No (2)

Display This Question:

If Are you currently working? = Yes

Q4 Profession

- Personal Trainer (1)
- Physical Education teacher (2)
- Coach (3)
- Other (4) _____

Page Break

Q6 Are you used to monitor people who have physical restrictions?

- Yes (1)
- No (2)

Page Break

Q7 How important do you consider your clients/athletes undergoing a physical evaluation before start exercising?

- Extremely important (1)
- Very important (2)
- Moderately important (3)
- Slightly important (4)
- Not at all important (5)

Page Break

Q9 Imagine that there is a gym in an hospital, how comfortable would you be to be PT there?

- Extremely comfortable (1)
- Somewhat comfortable (2)
- Neither comfortable nor uncomfortable (3)
- Somewhat uncomfortable (4)
- Extremely uncomfortable (5)

Page Break

Q10 Imagine that a new service, a Clinical Gym, came up in the market.
A Clinical Gym, combines the patient's fitness objectives with his health limitations, thus having a more tailored plan of exercises, vis a vis traditional gyms.
The idea of these Clinical Gyms is to combine the medical evaluation performed by a doctor/therapist with the elaboration of a training plan made by a personal trainer, which is adapted to the patient's needs and aspirations.
The usage of the joint know-how of both professionals should have synergies, since both the Doctor/therapist and the Personal Trainer would be in permanent contact, thus reducing the amount of information lost, while allowing an optimization of the exercises performed, enabling clients to achieve their fitness objectives with the minimum impact on their health.
When compared with the usual functions of the Personal Trainer/coach, the only difference would be the communication with the medical staff, while designing the clients' training plans and adapted exercises.

Page Break

Q11 From 1 to 5, how much do you consider that this service would be advantageous for patients? (being 1 = disadvantageous and 5 = extremely advantageous)

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)

Page Break

Q12 Tell, how much do you agree with the following sentences:

	Strongly agree (1)	Somewhat agree (2)	Neither agree nor disagree (3)	Somewhat disagree (4)	Strongly disagree (5)
I would be much more confident about my clients' health by providing this service (1)	○	○	○	○	○
I think that this service wouldn't have an impact on my work (2)	○	○	○	○	○
I think clients would trust me more (3)	○	○	○	○	○
I think this service would decrease the trust that my clients have on me (4)	○	○	○	○	○
I consider this service valuable for clients (5)	○	○	○	○	○
I am optimistic regarding my relationship with doctors (6)	○	○	○	○	○
I think all parties (PTs, doctors and patients) would benefit from this service (7)	○	○	○	○	○

Page Break

Q13 Tell how different do you consider that your job would be (in comparison with traditional gyms)

- Extremely different (1)
- Somewhat different (2)
- Totally equal (3)

Q14 From 1 to 5, tell your interest in provoding this service (being 1 = not interested at all and 5= Extremely interested)

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)

End of Block: Default Question Block