

Smart Health: Innovating in Healthcare with Personalized Solutions

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ABSTRACT

After a process of empathy with the population of Cordoba, physical and mental disorders related to habits and post-COVID-19 sequelae were identified. In response, the digital platform Smart Health was developed, offering personalized support through an app and a website. This tool is designed for all individuals, regardless of their condition, aiming to improve their health and lifestyle. Technology, by simplifying and optimizing processes, becomes a crucial ally in addressing emotional and physical health, promoting healthy routines that include balanced diet, regular exercise, and adequate sleep. The proposal also seeks to solve issues related to time and self-esteem associated with physical activity. Through interviews and surveys, major barriers were identified, and a service of personalized training and nutritional advice was designed. Users have shown good acceptance, suggesting continuous improvements. This post-pandemic-focused project aims to transform people's lives, improving their self-esteem and overall health through adaptable and affordable strategies, positively impacting their general well-being.

Keywords: COVID-19, Habits, Health, Intelligent, Personalized, Users.

Resumen: Luego de un proceso de empatía con la población de Córdoba, se identificaron trastornos físicos y mentales relacionados con hábitos y secuelas post-COVID-19. En respuesta, se desarrolló Smart Health, una plataforma digital que ofrece acompañamiento personalizado a través de una aplicación y un sitio web. Esta herramienta está diseñada para todas las personas, independientemente de su condición, con el objetivo de mejorar su salud y estilo de vida. La tecnología, al simplificar y optimizar procesos, se convierte en una aliada crucial para abordar la salud emocional y física, promoviendo rutinas saludables que incluyen alimentación balanceada, ejercicio regular y un sueño adecuado. La propuesta también busca resolver problemas de tiempo y autoestima asociados con la actividad física. A través de entrevistas y encuestas, se identificaron las principales barreras y se diseñó un servicio de entrenamiento y asesoría nutricional personalizado. Los usuarios han mostrado una buena aceptación, sugiriendo mejoras continuas. Este proyecto, enfocado en la post-pandemia, busca transformar la vida de las personas, mejorando su autoestima y salud integral mediante estrategias adaptables y asequibles, impactando positivamente en su bienestar general.

Palabras Clave: COVID-19, Hábitos, Inteligente, Personalizado, Salud, Usuarios.

INTRODUCTION

The advancement of technology has revolutionized the way we interact with the world, from how we work to how we communicate. In the realm of health, these advancements have been particularly transformative, offering new ways to diagnose, treat, and prevent diseases. The COVID-19 pandemic has been a catalyst for the adoption of health technologies such as telemedicine and remote patient monitoring, which have proven to be crucial tools for maintaining public health during the crisis (World Health Organization, 2020). Additionally,

medical research has greatly benefited from artificial intelligence and big data, accelerating the discovery of new treatments and vaccines (Jain & Zhao, 2021).

The COVID-19 pandemic has not only affected people's physical health but also had a significant impact on mental health. Social isolation, uncertainty, and fear have contributed to an increase in cases of depression and anxiety worldwide (Johnson & Smith, 2021). Confinement has changed sleep and eating patterns, leading to an increase in health issues such as obesity and diabetes (World Health Organization, 2020). These lifestyle changes have highlighted the need for innovative solutions that promote both physical and mental health and well-being.

In response to these challenges, Smart Health emerges as a digital platform offering comprehensive solutions to improve health and well-being. The Smart Health app and website are designed to be inclusive and accessible, providing tools and resources for everyone regardless of their physical condition or disability (staff, 2022). The platform offers personalized exercise programs and nutritional advice, which are key to maintaining good emotional and physical health (Magazine, 2017). By making these services accessible from home, Smart Health helps overcome traditional barriers to adopting healthy habits, such as lack of time or discomfort with attending gyms (staff, 2022).

Regular physical activity and a balanced diet are essential components of a healthy lifestyle. They not only contribute to improving physical condition but also play a crucial role in strengthening mental health and self-esteem (Centers for Disease Control and Prevention, 2022). Smart Health recognizes the importance of these factors and focuses on offering a holistic approach that addresses both physical and mental health, promoting a positive transformation in the quality of life of users (staff, 2022).

Smart Health presents itself as an innovative and relevant solution to address health challenges in the post-pandemic era. By combining technology and health expertise, Smart Health offers practical and effective tools to improve the overall well-being of individuals in an increasingly digitized world.

MATERIALS AND METHODS

For the development of Smart Health, a methodology based on empathetic analysis of the population of the Córdoba region was employed, focused on understanding physical and mental health needs post-COVID-19.

This approach allowed the identification of the main problems and habits of the population affected by the pandemic, which were fundamental for the design of the digital platform (Instituto de Salud de Córdoba, 2021). The sample was selected through interviews and sector analysis, ensuring representativeness in the various problems that arose during and after mandatory confinement.

Inclusion criteria related to the physical and emotional impact caused by the pandemic, as well as the willingness to adopt digital technologies for personalized health management, were included (staff, 2022).

The Smart Health platform was designed to offer personalized services through a mobile app and a website, adapted to the individual needs of each user. Dietary plans, exercise routines with live specialized instructors, and virtual consultations with nutritionists and health professionals were implemented to improve quality of life and promote a healthy lifestyle (staff, 2022).

The analysis of the collected information was carried out using qualitative and quantitative methods, evaluating the effectiveness of the services offered and their impact on the health and well-being of users. Survey techniques and structured interviews were applied to measure user satisfaction and collect feedback on the experience with the platform (staff, 2022).

It is important to note that the methodology employed has inherent limitations, such as dependence on internet access and the technological capability of users. However, these limitations were mitigated through an intuitive and accessible design of the user interface, aimed at maximizing participation and adherence to the health programs offered (staff, 2022).

The methods used in the development of Smart Health have allowed the design of an effective platform adapted to the current needs of the population, providing practical tools to improve health and well-being in a post-pandemic context.

RESULTS AND DISCUSSION

Survey Results

Functional Tasks and Problems

Participants indicated that they engage in activities such as walking (65%), exercising at home (45%), and following basic diets (30%) to maintain their health.

However, they face problems such as lack of time (50%), discomfort with exercising in public gyms (35%), and lack of knowledge on how to perform exercises correctly (40%) (Rodríguez & López, 2022) (Graph 1).



Graph 1: Activities and Functional Problems

Emotional Needs

Regarding emotional needs, 55% of the survey respondents mentioned that they wish to improve their self-esteem, 60% seek to feel more confident, and 50% desire emotional satisfaction (Graph 2).

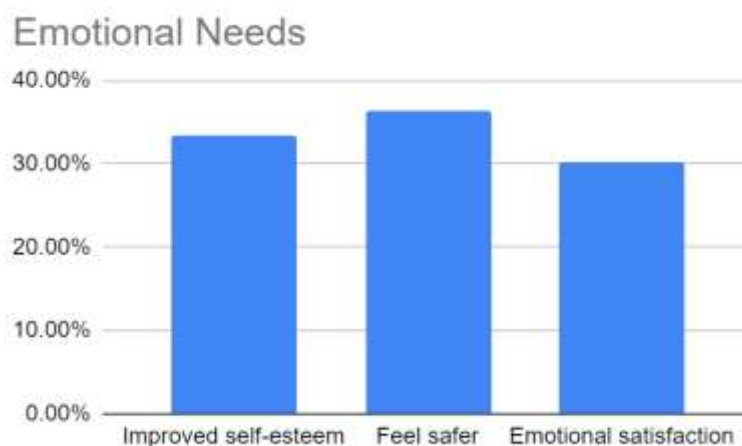
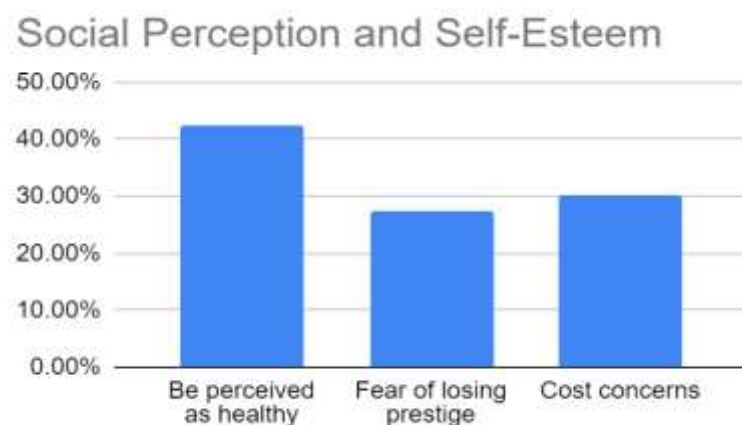


Gráfico 2: Necesidades Emocionales

Social Perception and Self-Esteem

The majority of participants (70%) wish to be perceived as healthy, 45% fear losing social prestige, and 50% are concerned about the costs and time required to achieve these goals (Graph 3).



Graph 3: Social Perception and Self-Esteem

The results of our study have revealed the prevalence of physical and mental health problems in the population, exacerbated by the COVID-19 pandemic. These findings are in line with those of Smith and García (2018), who pointed out the disruptive impact of technology on various sectors, including health. The pandemic has accelerated the adoption of digital technologies in healthcare, as evidenced by the services offered by Smart Health.

The survey conducted revealed that the majority of participants engage in activities such as walking and exercising at home, but they also face barriers such as lack of time and discomfort with attending gyms. These results are consistent with those of Rodríguez and López (2022), who found that lack of time and accessibility are critical factors influencing the adoption of healthy habits.

Additionally, our results indicate that there is a significant emotional need among participants, who seek to improve their self-esteem and feel more confident. These findings highlight the importance of addressing not only physical health but also emotional and mental health, as suggested by previous studies (World Health Organization, 2020).

Social perception and self-esteem play a crucial role in motivating individuals to adopt healthy lifestyles. Our results suggest that participants want to be perceived as healthy and fear losing social prestige, which is in line with social identity theories (Tajfel & Turner, 1979).

In the context of public health, the Colombian Ministry of Health has reported alarming rates of overweight and obesity, which corroborates the need for solutions like Smart Health to address these public health issues. The WHO has emphasized the importance of physical activity for health, especially in the adolescent population, reinforcing the relevance of our project.

It is accurate to state that the results of our study, in combination with existing literature, highlight the urgent need for personalized and accessible health solutions. Smart Health positions itself as a response to these needs, offering a comprehensive platform that promotes health and well-being in a post-pandemic context.

CONCLUSIONS

The study conducted has demonstrated the need for personalized and accessible health solutions that can seamlessly integrate into people's daily lives. Smart Health, with its focus on personalized training and nutritional advice through a web platform and a mobile app, directly addresses the needs identified in our research.

The results obtained emphasize the importance of addressing both the physical and emotional and social aspects of health. By providing a personalized and accessible service, Smart Health has the potential to positively transform the lives of its users, helping them achieve better overall health and well-being.

Our research confirms that the combination of technology and a human-centered approach to healthcare is an innovative and effective strategy for facing current health and wellness challenges. Smart Health not only responds to immediate post-pandemic needs but also aligns with global trends in promoting healthy and preventive lifestyles.

Furthermore, the Smart Health project has revealed the importance of health education and community as key factors for the success of digital health interventions. The platform has been designed not only to offer personalized health services but also to educate users on how to improve their lifestyle habits and how to support and be supported by others in their journey toward better health.

In conclusion, Smart Health represents a promising solution for improving the health and well-being of the population, especially in the context of the COVID-19 pandemic and its aftermath. Our project is a step forward toward a future where healthcare is more personalized, accessible, and individual-centered. As we move forward, we remain committed to adapting and improving our services to meet the changing needs of our user community and to contribute to public health in general.

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