



## SOCIAL WELL-BEING AND SPORT ACTIVITIES IN THE DIGITAL AGE

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### **Abstract:**

Social well-being is increasingly recognized as a crucial factor in defining and understanding health. In recent years, health issues have transcended the boundaries of medical science, which once held a dominant position under the positivist biomedical model. In today's digital era, health is explored through a broader spectrum of disciplines, which include sociology, psychology, political economy, cognitive sciences and, notably, sports science. This study, following interdisciplinary paths, seeks to construct a theoretical framework that facilitates the analysis and examination of social well-being within the context of sports and exercise, addressing both the virtual and physical dimensions of reality.

**Keywords:** social well-being, digital-virtual world, avatars, athletic activity, sport exercises

### **1. Introduction: How is Health understood?**

Reflections on health often start with the definition provided by the World Health Organization (WHO), a globally recognized authority. According to this definition, which serves as a key reference for many researchers and scientists, health is described as *"a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."* Additionally, the pursuit of the highest possible standard of health is

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considered a fundamental right of every individual, regardless of race, religion, political beliefs, or economic or social status (WHO, 2006).

The World Health Organization emphasizes that health is multifaceted and complex, incorporating psychological and social aspects into its definition. This comprehensive view indicates that health results from the complex interaction of many factors, such as biological, nutritional, physical, cultural, social, technological, and environmental elements, all expressed through the human body (Patsantaras, 2020). Therefore, health is not just a personal issue but a core value that goes beyond the individual (public good).

### **1.1 Biomedical or Medical-Centric View of Health**

Within the scope of the biomedical paradigm that emerged in the Western cultural sphere, particularly during the modern era, health was primarily defined as the absence of disease or disability. Influenced by the Cartesian distinction between mind and body, as well as a mechanistic view of the human organism, medicine has long been regarded as the principal domain for addressing disease and promoting health. In this framework, health was equated with the seamless operation of the human body, while illness was viewed as a mechanical malfunction that required correction (Nettleton, 2006).

In this context, health issues are oscillating both semantically and functionally between hospital care, technological support, and treatment methods. This leads to the emergence of a strictly medical-centric view of health, which not only limits our understanding but may also hinder our appreciation of the significant role that the socio-cultural environment plays in the emergence, progression, and treatment of a disease. When we seek explanations for health issues, particularly illnesses, solely within biological frameworks and attribute them to biological causes, we find ourselves ensnared in a form of extreme biological reductionism.

The physical or biological body serves as the arena where interactions among mental, psychological, and socio-cultural-environmental factors occur. The body is the final recipient of all these processes. However, any effort to improve health must extend beyond a purely biomedical approach.

When health and the human body are examined only through a biological lens, the body's complexity is overlooked. Various social and cultural factors, along with the meanings and significance connected to the body, are often ignored when considering its role in everyday life.

## **2. Literature Review: The Social Dimension of Health**

The World Health Organization's (WHO) definition of health extends beyond traditional medical fields, such as pathology. This comprehensive approach has often been described as maximalist, utopian, idealistic, and even unrealistic, as it posits health as a state of completeness that may only be attainable by a limited number of individuals (Saracci, 1997; Card, 2017).

In response to such critiques, the relevant literature has introduced more dynamic and functional perspectives on health. For example, Bircher (2005) connects health issues to factors like age, cultural background, and personal responsibility. Similarly, Huber et al. (2011) define health in terms of an individual's capability to manage physical, mental, and social challenges.

Current concepts of health within the social sciences have evolved to encompass factors that the classical medical paradigm often neglects. As documented in the literature, three primary influential perspectives have emerged, shaping contemporary understandings of health and illness in the various phases of post-modernity.

Firstly, Talcott Parsons' perspective within his functionalist framework regarding the "sick role" addresses how society manages illness. In his works from 1951 and 1979, Parsons analyzes and examines health through a functional lens (Functional Definition of Health), underscoring that illness disrupts not only an individual's biological equilibrium but also their social functioning. Illness impairs one's ability to meet the expectations and responsibilities associated with work, family, and broader social roles. If left unaddressed, it could cause social instability.

Secondly, Michel Foucault (1994) presents a contrasting view, emphasizing that numerous factors—ideological, cultural, economic, social, educational, sexual, and religious—play a critical role in health issues. Foucault explores the methods and structural pathways through which medical authority extends beyond mere disease treatment, influencing norms and expectations surrounding health and behavior. Through the concept of the "medical gaze," he illustrates how medical authority, embodied by health professionals and shaped by specific ideologies, constructs power structures, molds social values, and controls how individuals perceive health and handle illness.

Thirdly, building on Foucault's ideas regarding medical authority, sociologists Irving Zola (1976) and Peter Conrad (2007) introduced the concept of "medicalization"<sup>ii</sup> to examine how various aspects of everyday life are framed in medical terms. They emphasize that, through this approach, numerous social issues encountered in daily life are redefined as medical problems. As a result, medicine becomes a major social institution that can shape and control social behaviors.

Considering these factors and the numerous research studies that have utilized them, it becomes clear that health is a complex and multidimensional phenomenon. At times, it relates to an objective biological condition; at other times, it pertains to a

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ii The term "medicalization" refers to a process in which medical terminology is employed to identify and define a problem. An example of this is seen in sports science with the concept of "sports prescription." Through medicalization, society increasingly accepts and institutionalizes the intervention and regulation of various aspects of life—both public and private—by the medical field, which diagnoses conditions and provides corresponding treatments. Drawing on the insights of Nettleton (2006) and Crawford (2006), this phenomenon reflects forms of social control enacted by the medical system, resulting in the medicalization of everyday experiences. For instance, problematic social situations may be framed in medical terms, such as deviant behaviors. Consequently, organizations and institutions emerge that adopt medical approaches to address a variety of social issues.

subjective experience shaped by social constructs. Health is not solely defined by biological data or necessities but is also influenced by social, cultural, political, and economic dynamics.

Kelman (1975, 630) emphasizes that the concept of "health" is defined socially. He further observes that the criteria for what constitutes illness and health—along with an individual's perception of being healthy or unwell—are not solely dictated by the medical profession. Instead, they also arise from the subjective<sup>iii</sup> experiences of individuals shaped by their specific social, ecological, and cultural environments (experiential definition of health). Health, therefore, can be understood semantically as a state of harmony within the individual (internal nature) as well as a state of equilibrium between the individual and the external environment (natural/ecological, cultural/social, etc.).<sup>iv</sup>

Extensive research and studies have revealed that perceptions of health and illness or normal and pathological are directly proportional to how societies, within specific historical periods and cultural paradigms, perceive, identify, and categorize these concepts. From this perspective, we acknowledge the social construction of health and illness, emphasizing that they are not merely biological phenomena of a static nature. Instead, health and illness are viewed as states that are dynamically influenced by biological factors, cultural beliefs, social norms, social etiquette, and historical changes, all within a context that is continually evolving in meaning and significance over time.<sup>v</sup>

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<sup>iii</sup> It is important to emphasize that subjectivity does not exist independently of the physical body. As noted by Varela et al. (1991, 11), both biological and mental phenomena are essentially "products" of the structure of our cognitive system. They arise from our subjective experiences. This understanding of reality, rooted in the isolated inner dimension of our embodied and personified subjectivity, is regarded as objective (Patsantaras 2019). Thus, the "first-person" experience is realized.

<sup>iv</sup> The world, the body and consciousness are intertwined and constitute an inseparable and indivisible unity which reproduces itself in the perspective of experiential time through continuous processes of interpenetration and correlation (Patsantaras 2020).

<sup>v</sup> Medical knowledge is, to some extent, relativized, as it is influenced by cultural beliefs, social biases, and historical developments. To illustrate this concept, we can refer to an example from the field of psychiatry, specifically the constructive nature of illnesses, as noted by Allen Frances (2013). The Diagnostic and Statistical Manual of Mental Disorders (DSM), often referred to as the "Bible of Psychiatric Diagnosis," is compiled and published by the American Psychiatric Association. This manual serves as a crucial tool for mental health professionals worldwide in diagnosing mental illnesses. Since its initial publication in 1952, this "Bible" has undergone numerous revisions, altering the critical boundaries between normality and mental illness and affecting significant aspects of individuals' lives. Questions surrounding who is considered healthy versus who is deemed ill, what types of treatment are appropriate, who bears the costs, and who is eligible for disability benefits have all been shaped by these definitions. For instance, the 1952 edition listed 106 disorders, with homosexuality being removed from the classification in 1974. The latest edition, DSM-5, introduces an expanded framework that broadens existing categories while adding new ones. This new categorization tends to label even benign behaviors as problematic, thereby creating an array of new diagnoses. Such developments, driven by a collaboration between psychiatrists and pharmaceutical companies, result in the manufacture of "new diseases," potentially increasing the number of patients dramatically and consequently yielding substantial profits for the pharmaceutical industry. Similar assertions regarding the constructive nature of illness from a sociological standpoint have also been articulated by Sarah Nettleton (2004).

### 3. The example of Health in the context of Modern Sports

In the 18th and 19th centuries, doctors and educators emphasized daily physical exercise as the essential foundation for nurturing moral values and promoting overall health, which was regarded as the highest human value (Cachay & Thiel, 2000; Eichberg, 1986). During this period, in the countries of Central and Western Europe and North America, the human body has increasingly been marginalized and distanced from many industrial production processes. In this context of technological and industrial advancement, doctors, philosophers, and thinkers have expressed concerns regarding the potential degeneration of the human body and, by extension, the deterioration of the human species. Polluted environments resulting from urbanization, coupled with detrimental lifestyles, may impede the ongoing evolutionary process (Heggie, 2016).

In the late 19th and early 20th centuries, such views resonated deeply with the aristocracy and upper classes. This perspective, combined with Herbert Spencer's popular theories, which suggested that social evolution mirrored the principles of biological evolution, led to the emergence of ideas surrounding "eugenics." Alongside the industrialization of lifestyles, eugenics propagated notions of genetically transmitted degeneration, framing it as an epidemic that would weaken individuals physically, mentally, and morally, ultimately threatening to decompose the social body.

Eugenics, in essence, redefined health issues in relation to reproductive processes involving individuals of differing racial characteristics, which were deemed problematic in the context of racial mixing between so-called superior and inferior groups (Crawford, 2006). In reality, the intermingling of races and the ongoing struggles of oppressed social groups and entire nations for emancipation and self-determination might steer this process into primitive and regressive directions.<sup>vi</sup>

In this timeframe, the concept of "racial health" emerged, leading to political movements aimed at removing or even eliminating those deemed "unfit" for the new industrial order. This notion of health facilitated social separation and discrimination. Protecting health through the lens of "eugenics" was viewed as a national duty—a commitment to society and a responsibility to both race and nation. Engaging in sports and physical exercise, which promote fitness and evoke traditional national values, was a response to these concerns. Physical education, gymnastics, and general exercise were

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<sup>vi</sup> Athletic activity and physical exercise have historically played a crucial role in the treatment and therapy perceived necessary for what was deemed a sickly, industrialized, and degenerate Western society at the close of the 19th century. The insights of physical education reformers such as Villaume, Gutsmuths, and Jahn highlight several key concerns: a) the lack of robustness and health evident in individuals within industrialized societies, b) the various diseases afflicting the civilized world, c) hypoactivity resulting from the detachment of the body from production processes characteristic of modern life, and d) the degeneration of the body caused by this new lifestyle, which is also linked to spiritual decline (Patsantaras 2007). In light of these considerations, we see, for example, today a contemporary revaluation of the physical body similar to that of earlier periods, albeit without the same unilateral emphasis on its role in educational institutions as was seen in the 19th century. Consequently, the semantics and social functions of the body have historically fluctuated between devaluation and revaluation, depending on the context, social field, and the social group or class involved.

seen as methods for those whose biological or physical health had deteriorated as a result of industrial evolution. In fact, this period also paved the way for middle-class women to participate in gymnastic activities, as they were considered responsible for "propagating the race" through reproduction (Patsantaras, 2015a). Exercise, sports, and fitness were thus intended not only to strengthen the body but also to further the ideology of progress in the context of capitalism through competition and to fulfill the objectives of eugenics. (Patsantaras 2026, 2007, 2015).

#### **4. Health as a Multidimensional Concept and a Multiplicity**

The physical, mental, and social dimensions of health cannot be approached in isolation or one-dimensionally, as indicated in the discussion. Instead, they must be viewed as interconnected elements that constantly interact and influence one another, forming a complex multiplicity. Thus, to define and understand health, it is vital to recognize the interdependence and continuous interaction among biological, psychological, socio-cultural, and various environmental factors, including political and economic elements. Health, like illness, cannot be reduced to a solely biological phenomenon; it is significantly shaped by the myriad aspects of the environment in which an individual is born, raised, educated, works, and lives (Nettleton, 2006; Crawford, 2006). Therefore, health is understood and defined as a complex state that is co-determined by psychosocial, social, cultural, and ecological-environmental influences (Hardey, 1998).<sup>vii</sup>

Health is understood as a multidimensional and dynamically evolving state of balance and harmony. This state encompasses various dimensions of the individual—biological, social, phenomenal, and others—alongside the social environment, the networks of interpersonal relationships, and the material and physical surroundings in which a person lives and operates. Health is experienced as a harmonious equilibrium between an individual's internal environment and their external conditions. Disruption of this state of harmony is a primary contributor to diseases, which, depending on the specific circumstances and conditions, can manifest in various ways and at different levels—ranging from cellular disruption to broader psychological or social issues.

The concept we refer to as "health" encompasses numerous definitions and interpretations. It can be described as the absence of symptoms or disease (negative definition), as physical capability (social functional definition), as the ability to fulfill roles (social emotional functionality), or, according to the World Health Organization, as a positive state of complete physical, psychological, and social well-being (positive definition). In this light, these various approaches contribute to a holistic understanding of health, linking it not only to biological and psychological factors but also to social variables such as material prosperity, overall well-being, and social justice (Bradby, 2009).

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<sup>vii</sup> The concept of health, as understood in this view, forms the basis of the specialized area called the sociology of health. This field, which critically challenges the dominant biomedical model, examines the many aspects of modern social life that affect individual well-being throughout life.

Considering all of the above, let us now explore how the term "social well-being" can be understood, its semantics, and its practical usefulness in everyday life.

#### **4.1. What does Social Wellbeing mean? What exactly does this term refer to?**

Social well-being is not merely a vague or abstract concept; it specifically pertains to social data that, influenced by various conditions, penetrates the "interior" of the body and significantly affects our biological functions. These factors play a crucial role in shaping our understanding of what constitutes a state of health. Typically, in line with the multifaceted nature of health, few research endeavors focus on social well-being using exclusively social terminology and sociological methods. More commonly, studies on this subject examine the social dimensions of health by analyzing mental data, aspects of mental health, and psychological pathways, primarily due to methodological considerations regarding research reliability.

Within the framework established by the World Health Organization, social well-being is acknowledged as a component of mental health. This dimension of mental health arises from an individual's integration into society, their contributions, and the positive impact they have on the community.

Social well-being generally refers to an individual's perception and feelings about themselves in relation to others and their experiences. It is a complex and often elusive state influenced by a variety of factors, as supported by numerous research findings. The realization of social well-being largely depends on the specific socio-cultural context, the quality of the institutions within which individuals live and operate—whether as citizens, consumers, or otherwise—and significantly on the level of education attained. This interplay is often referred to as "individual social capital."

Functioning effectively in life encompasses more than just what we typically define as psychological well-being. It also involves social parameters that shape our understanding of social well-being, as articulated by Keyes (2002) with the following dimensions: social coherence, social actualization, positive relationships with others, social integration, social acceptance, and social contribution.

Social cohesion emerges when individuals feel a sense of belonging to a group, community, or society, supported by qualitatively balanced relationships, shared elements, common value systems, mutual orientations, and aligned perceptions among members (Kamberidou & Patsantaras, 2007). Social realization, which is fundamentally linked to social acceptance, requires an environment free from social rejection and the accompanying physical and emotional distress (Eisenberger et al., 2006). When these conditions are satisfied, true social inclusion is achieved. Within this framework, social contribution relates to individuals' need to perceive themselves as vital members of society, believing that their actions are positively recognized and contribute to the greater good.

To explore this further, we can examine the role of sports and exercise by asking: Which sporting activities (recreational, competitive, championship, etc.) and which forms of physical exercise best foster and activate these conditions that collectively constitute social well-being?

In this perspective, particularly regarding sports and exercise, social well-being is not viewed as an abstract or vague notion devoid of physicality. Instead, it is recognized as a state that is inherently connected to the physical body, experienced through the presence of the body itself.

Each type of fitness activity and exercise, as well as various athletic endeavors across different sports contexts—such as recreational activities, school sports, extreme sports, competitive championships, rehabilitation exercises, and gym workouts—exerts unique effects on the body. These activities convey distinct meanings and engage the body's systems and components of social well-being in diverse ways and to varying extents (Lazarou & Patsantaras, 2013).

## **5. Athletic activity, sports exercises, and social well-being**

In international literature, numerous studies underscore the contributions of physical and athletic activity to the promotion and maintenance of both physical health and mental-spiritual well-being (notably, Blair et al., 1989; Fox, 1999; Macera et al., 2003; Warburton et al., 2006, and Malm et al., 2019). However, there is a notable scarcity of research dedicated solely to examining the role of exercise and athletic endeavors in fostering social well-being. This gap can be attributed, in part, to our conceptualization of social well-being and how we connect it to sports and athletic activity.

For instance, considering Parsons's functional definition of health (1951, 1979), social well-being relates to an individual's ability to meet expectations within the framework of social functions, obligations, and roles. In light of this interpretation, when exploring correlations between sporting activity and social well-being, it is essential to investigate whether and to what degree such activity enables individuals to effectively fulfill specific roles and meet social expectations, taking into account particular socio-cultural, national, and economic-political contexts.

We should examine the role of sports and exercise in relation to Michel Foucault's perspective on health. It is essential to assess how these activities can serve as forms of liberation from the authoritarian structures and ideologies imposed by the medical system.

Additionally, following the insights of Zola (1976) and Conrad (2007), we should explore the potential of these activities to facilitate disengagement and de-dependence from the social issues associated with the "medicalization" mandated by the dominant medical system of today.

In correlating social well-being, as articulated by Keyes (2002, 209), with the dimensions of coherence, social actualization, social integration, social acceptance, and social contribution, it becomes evident that sports serve as a significant social arena. This field presents individuals with numerous opportunities to gain valuable social experiences, as supported by various research studies conducted across different sports domains or subsystems.

In particular, these opportunities facilitate the formation and development of new identities, as well as ongoing processes of socialization and re-socialization. Such

experiences enable participants to join new social groups, challenge prejudices surrounding various forms of diversity and social exclusion, cultivate empathetic relationships, and effectively navigate different social roles (Coakley, 1998; Georgiou, Patsantaras, & Kamberidou, 2018, 2024; Gifford-Smith & Brownell, 2003; Kamberidou 2025, 2019; Kamberidou, Bonias, & Patsantaras, 2019; Kamberidou & Patsantaras, 2007; Patsantaras, 2017; Patsantaras & Kamberidou, 2006; Patsantaras & Kamberidou 2022).

Research data suggests that engaging in sports activities not only motivates individuals to participate in various social endeavors but also strengthens community bonds and enhances the broader social experience. It fosters the development of social networks and encourages volunteerism, while also creating economic opportunities and facilitating the "production of social capital" and social mobility (Kamberidou 2025; Kamberidou 2019; Kamberidou & Patsantaras 2007; Kremer-Sadlik & Kim 2007; Malina 2009; Marlier et al. 2015; Spaaij 2009;).

Participation in any form of sports—be it team-based or individual—is beneficial for enhancing physical, mental, and social health across all age groups, with team sports showing particularly positive effects in this regard (Ishihara et al., 2020; Koolhaas et al., 2018; Harrison and Narayan, 2003). Additionally, research indicates a strong interconnection between participation in sports, physical exercise, social capital, and mental health (Marlier et al., 2015).

Research data suggests that the social and mental health benefits gained from participating in sports activities are significantly greater than those derived from engaging in other recreational leisure pursuits (Eather et al., 2023). Involvement in sports positively influences social health by fostering the development and enhancement of social skills (Blomqvist, 2020), improving interpersonal communication (Brinkley et al., 2017), and strengthening the sense of belonging (Thorpe et al., 2014).

When we consider the sports field or system through the lens of "internal differentiation," we observe that various subsystems and sports models—such as "championships," "recreational sports," and "extreme sports" (Patsantaras, 1994)—develop a degree of autonomy and are underpinned by distinct value and moral frameworks. In light of this, it becomes challenging to collectively endorse the role of sports in promoting forms of social well-being.

Research data suggests that, in relation to specific sports models and individual sports such as marathon running, rhythmic gymnastics, and boxing, as well as varying socio-cultural circumstances, negative effects can arise. These may include poor mental health (Rice et al., 2016), injuries (Soligard et al., 2016), eating disorders (Joy et al., 2016), and various biological and organic damages (Georgiou, et al., 2024; Clark & Mach, 2016). Additionally, participants might encounter forms of physical and psychological abuse (Lang and Safeguarding, 2014).

When research focuses on specific fields and variations of sports (such as extreme sports, athletics, recreational activities, etc.) or physical exercise, conflicting findings often emerge based on the context. The results from relevant studies indicate a diversity that can be attributed to the methodologies employed and the type of physical exercise or athletic activity examined. For example, one study revealed that former NFL players

(who participated at championship/elite levels) reported feelings of social isolation during their careers (McGraw et al., 2018).

In contrast, other research has found no correlation between elite-level participation and social isolation or other forms of social dysfunction (Purcell et al., 2020). Data demonstrates a strong connection between social isolation and loneliness with an increased risk of various mental and physical health disorders (Klinenberg, 2016; Newman & Zainal, 2020). Conversely, other research suggests that engagement in sports activities can facilitate integration into social networks and participation in community activities (Kamberidou, 2025; Kamberidou, 2019; Kamberidou & Patsantaras, 2007).

Participants in team sports at sports clubs reported greater mental health and life satisfaction compared to those involved in individual sports within the same setting (Eime et al., 2014). However, some studies suggest that while team sports can enhance social cohesion under certain sociocultural conditions, they may not necessarily have a positive impact on mental health (Doré et al., 2018; Patsantaras & Kamberidou, 2022). As the literature indicates, physical activity and sport can have a dual effect on health, presenting both benefits and drawbacks.

In alignment with the WHO definition of health and reflecting the numerous benefits attributed to physical activity and sport by most research, we can delineate health at various levels of physical activity and sports engagement. Health can be defined subjectively (e.g., an individual feels good while participating in exercise or sporting activities). It can also be described in biological terms (e.g., someone engaged in exercise or sports is less likely to fall ill). Furthermore, we can consider a broader functional perspective on health (e.g., an individual's social performance may be enhanced through athletic performance). Additionally, it can be understood in terms of social dimensions of health (e.g., fostering a sense of belonging within a community and valuing diversity through cooperation).

The various forms of social well-being that can be fostered through athletic activities and physical exercise are not exclusively related to the absence of negative or challenging conditions in the lives of those who engage in these activities. Instead, they are more closely linked to the effective management of such negative or difficult social circumstances. To effectively examine the role of sport and exercise in enhancing social well-being, we must approach it from this perspective.

In contemporary Western societies, there is a notable emphasis on disease prevention programs that highlight the connections between health and sport. Sports activities are increasingly recognized as significant contributors to physical, mental, and social well-being. The conceptual model of Health through Sport establishes a link between sport participation and various physical, social, and psychological outcomes, while also emphasizing the necessity for a deeper understanding of these interrelated outcomes.

## 6. Versions of social well-being in the digital-virtual world

In today's digital landscape, individuals can navigate their way through the online world by creating virtual identities and potential bodies (or personas), such as avatars. This enables them to engage in extensive social participation and cultivate a diverse array of social connections, ultimately fostering a social network that provides both support and enjoyment. Particularly, the younger generations (Z, A, B) possess the capability to harness these technologies and adapt effortlessly to the virtual landscape. They can achieve a sense of social well-being remotely, even in the absence of physical presence and without the direct visibility of the human body.<sup>viii</sup>

By utilizing online platforms that provide remarkable opportunities for social interaction, users can engage in experiences that foster social acceptance, support, participation, contribution, fulfillment, and cohesion. Within these virtual environments, individuals can connect with others, which helps counter the notion that these spaces solely reinforce the dominance of individualism. As a result, virtual reality has been viewed as a potential force for opposing and mitigating the tendencies of fragmentation and individualization prevalent in modern societies (Livingstone, 2003).

Reckless engagement with the internet and virtual realms may lead certain individuals, particularly adolescents, to develop deficient behaviors related to social skills. This could manifest as an increase in individualism, decreased sociability, and reduced enculturation (Thiel/Gropper 2017). From a conventional perspective, however, members of the digital generation, identified two decades ago, do not lose their sociability; instead, they cultivate a distinctly new set of social skills (Tapscott, 2009; Patsantaras, 2019; Uhl et al., 2023).

Empirical research indicates that engagement in virtual reality (VR) and augmented reality (AR) gaming environments significantly enhances social interactions and fosters a sense of belonging within the respective gaming communities (Barreda-Ángeles & Hartmann, 2022; Brakel van et al., 2023). Research studies indicate that online sociability relies not only on technological capabilities but also on the skills users develop through repeated social interactions in digital environments (James & Leader, 2023). Consequently, the advantages of participating in digital activities appear to be influenced, among other factors, by the user's social capital, much like in other realms of existence.

## 7. Embracing sporting activity and social well-being through the lens of virtual reality

Research has shown that participation in sports activities can greatly enhance both short-term and long-term physical, mental, and social health and well-being. These activities typically foster conditions that activate the elements and processes essential to social

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<sup>viii</sup> This certainly does not imply that the physical body exists as a mere passive element, devoid of significance. For a more in-depth exploration of this concept, refer to the comprehensive analysis provided by Patsantaras in 2020.

health and social well-being. When we consider that social functions in the realm of virtual reality often occur imitatively (Patsantaras 2020, 2019), it stands to reason that engaging individuals in virtual sports activities may also stimulate the components that contribute to social well-being within the physical dimension of reality.

Research studies indicate that augmented reality (AR) sports games can enhance not only physical health but also mental and social well-being (Lima et al., 2023). It is important to recognize that these dimensions of health are interrelated, which is why we refer to the concepts of interaction and interpenetration<sup>ix</sup>. This signifies an interconnected relationship among physical health, psychological well-being, and social wellness, as well as the different levels of reality in which these aspects of health are experienced, such as physical, virtual, and hybrid realities (Ng et al., 2019; Huang et al., 2021).

Our research data indicates that social interactions occurring within AR/VR game environments, including AR/VR sports games, positively influence psychological well-being. This, in turn, affects and is influenced by the aspect of social well-being (Mandryk et al., 2020). Consequently, many research studies identify “social well-being” as a co-effect of both physical/biological health and psychological well-being. In the context of augmented reality sports activity, where users engage in digital physical activity, a beneficial impact on both the physical and psychological dimensions of health is observed.

A study conducted by Hajder et al. (2025), which involved a systematic literature review and meta-analysis, highlights that participation in virtual reality (VR) physical activity programs offers notable benefits in enhancing flexibility, motivation for physical activity, and psychological well-being. However, traditional exercise (TR) remains essential for developing strength, endurance, and cardiopulmonary fitness. For instance, in scenarios where individuals passively engage with their physical bodies—such as when an avatar performs sports activities in a virtual environment while the human operator merely observes its movements on a screen—we may promote social well-being but potentially face negative impacts on the biological aspect of health (Patsantaras 2019, 2020).

We can highlight that traditional exercise and virtual reality (VR) physical activity have a complementary relationship concerning a “holistic” approach to health. Research indicates that participation in VR physical activity programs leads to diverse evaluative ratings regarding health (Lazarou & Patsantaras, 2013; Ahn & Fox, 2017; Syros et al., 2023). Furthermore, evidence suggests (Bányai et al., 2019) that users who engage with sports games spend more time online compared to traditional gamers and perceive this activity as a means of escaping everyday challenges. It is important to distinguish

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<sup>ix</sup> We draw upon the concept of interpenetration as articulated by sociologist Niklas Luhmann in 1981. According to Luhmann’s theory, the physical-biological, psychological, and social dimensions of health can be viewed as relatively autonomous subsystems. However, they also engage in a dynamic process of mutual influence, where the boundaries of each subsystem are defined and simultaneously blurred by their interactions. As such, health is understood as a system—a state constituted through the continuous interrelations and interdependencies among biological, psychological, and social factors. The identical processes occur among the various aspects or layers of a given situation, which we conceptualize as reality.

between users who play sports games professionally, viewing their engagement as work, and those who play for enjoyment, as they approach their activity from different levels of social well-being.

AR/VR sports games have the potential to foster a strong sense of presence among participants by enabling real-time communication through avatars and nonverbal cues. Notably, these social connections not only generate interactive social environments (Neumann, 2016) but also play a crucial role in enhancing players' psychological well-being. These games are not just entertaining; they also contribute to alleviating feelings of loneliness (Kim et al., 2025). When individuals experience a sense of presence with others via avatars, the quality of interaction and social presence becomes significantly more profound (Slater & Sanchez-Vives, 2016).<sup>x</sup>

Users who frequently engage in gaming and experience feelings of loneliness or mental health challenges in their daily lives are more likely to derive positive social and psychological benefits from their gaming experiences. For instance, customizing avatars in games has been shown to enhance players' sense of identity and engagement, significantly boosting their enjoyment and psychological satisfaction (Liao et al., 2019). The ability to create personal avatars while also viewing the virtual characters of others can further enhance users' sense of social presence. Additionally, online communication and engagement serve as effective tools for alleviating feelings of loneliness, which subsequently increases users' overall psychological and social well-being (Thangavel et al., 2022).

As numerous research studies indicate, unilateral engagement with AR/VR sports games does not provide a comprehensive solution for addressing social well-being. Not all participants in these virtual sports experiences benefit equally or to the same extent.

This complexity illustrates the intricate nature of researching social well-being in the realm of sports and exercise, particularly from a digital and virtual reality perspective. For instance, when we consider that prolonged and excessive engagement in virtual sports activities—where the physical, biological body is passive—can be compared to internet addiction, the issue becomes significantly more complicated.

Internet Addiction (IA) is understood as excessive internet use that leads to psychological and social disturbances (Karakaş-Çelik et al., 2016). While not officially recognized by the WHO, internet addiction is a serious and problematic condition. Research highlights that the unrestricted use of the internet poses a public health challenge (Block, 2008). Like other forms of addiction, internet addiction negatively impacts health as well as behavior and social relationships (Müller et al., 2020; Yao et al., 2020; Lozano-Blasco et al., 2022). Consequently, it affects the dimension of health we understand as social well-being.

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<sup>x</sup> Social presence is a critical factor in the study, analysis, and investigation of social interactions within virtual environments. It refers to the degree to which individuals perceive others as being present in a communication setting. This sense of social presence is thought to significantly impact the quality of interactions and the relationships formed through these media (Biocca et al. 2003, Patsantaras 2020, 2026).

## 8. Concluding remarks

The World Health Organization's definition of health emphasizes its multifaceted nature, shifting the focus of research from a strictly medical perspective and purely biological dimensions to include mental and social aspects of health. This entrapment in the biomedical paradigm hinders our ability to fully comprehend the crucial role that the socio-cultural environment plays in the emergence and development of disease.

The concept of health, defined as a state of complete physical, mental, and social well-being that extends beyond the realm of medicine (pathology), has often been regarded by many researchers as unrealistic, particularly in terms of social well-being. As an alternative, dynamic and functional definitions of health have been proposed, allowing for a more nuanced examination and evaluation of social well-being using sociological criteria. The distinction between what is deemed healthy and unhealthy is shaped by a continuous interaction and interconnection of biological, psychological, socio-cultural, and environmental factors, including political and economic influences. This understanding of health is dynamically informed by biological data, cultural beliefs, social norms, etiquette, and historical changes, all within the context of an ever-evolving historical narrative.

In this framework, research utilizing functional definitions of health has identified significant and intriguing correlations between physical exercise, athletic activity, and social well-being. These relationships have been observed both in traditional understandings of sports and in the emerging realm of virtual or digital athletic experiences.

In discussing the contribution of physical exercise and sports activities to achieving satisfactory health levels, a range of opinions emerges. This variability, as evidenced by research data, largely correlates with the type of sport—be it competitive, recreational, or rehabilitation-focused for skeletal dysfunctions and chronic conditions. Additionally, it is significantly related to the nature of the sports activity itself and the participants' "sports capital," as well as the broader context in which these activities occur.

Individuals can experience various forms of social well-being in virtual reality through simulated social situations. By participating in scenarios that promote social acceptance, support, involvement, contribution, fulfillment, and cohesion on online platforms, users can access important opportunities for social interaction.

Building on this idea, we can suggest that participants in sports activities using virtual avatars have the potential to interact and develop experiences related to 'social well-being' and 'social health.' The ability to create digital sports identities and avatars allows them to participate actively in social interactions, build many social connections, and develop a satisfying social network that offers crucial support and enjoyment.

However, systematic research is needed to determine whether and how participation in physical and sports activities within virtual environments can serve as a new way to improve health and quality of life. Here, we see a range of perspectives, with a key factor being the level of active versus passive participation of the physical body.

Participation in virtual sports games and exercises—particularly through avatars—has been the subject of considerable research, often highlighting its limited impact on physical fitness and overall health. Many studies point out that time spent engaging with digital media can replace real-world play and physical activity. Empirical evidence consistently indicates that prolonged sedentary behavior, such as playing video games while seated, correlates with higher obesity rates and decreased motivation for physical activity. Research underscores the potentially detrimental effects on health—both physical and mental—as well as social well-being, especially among children and adolescents who primarily interact within virtual environments.

It is important to recognize that the "game of health" occurs and is realized on the human body (externally) and within the human body (internally). As confirmed in this interdisciplinary discussion, the "physical" body is present at all levels of reality (physical reality, virtual reality, hybrid reality, subjective, objective, etc.). Although the physical body may not always be visible in certain contexts, it exists across all these dimensions. Consequently, our experiences—whether healthy or unhealthy, in the real world, in virtual spaces, or in hybrid environments—ultimately impact and leave an imprint on our biological bodies.

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### **Conflict of Interest Statement**

The authors declare no conflicts of interest.

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