Assessing the influence of COVID-19 Protocol on Online Health Information Seeking Intention of Athletes in India

Rajat Kumar Behera[a,*], Pradip Kumar Bala[b], Nripendra P. Rana[c], Yogesh K Dwivedi[d,e]

Rajat Kumar Behera
[a]School of Computer Engineering,
Kalinga Institute of Industrial Technology (KIIT) Deemed to be University
KIIT Road, Patia, Bhubaneswar, Odisha 751024, India
rajat_behera@yahoo.com

Pradip Kumar Bala
[b]Indian Institute of Management Ranchi,
Ranchi, Jharkhand, India
pkbala@iimranchi.ac.in

Nripendra P. Rana
[c]College of Business and Economics
Qatar University, Doha, PO Box 2713, Qatar
nrananp@gmail.com

Yogesh K Dwivedi
[d]Emerging Markets Research Centre (EMaRC),
School of Management, Swansea University,
Bay Campus, Fabian Bay, Swansea, Wales, UK
y.k.dwivedi@swansea.ac.uk

[e]Department of Management,
Symbiosis Institute of Business Management,
Pune & Symbiosis International (Deemed University),
Pune, Maharashtra, India
ykdwivedi@gmail.com

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Abstract

Purpose: The Internet is used as a tool to seek health information by individuals. Mental health concerns are the high prevalence of the novel Coronavirus disease 2019 (COVID-19) and preventive steps are required to curb the illness. Therefore, to gain more insight into health concerns, it is now a common practice to seek health information on the Internet. This study propose an integrated theoretical model to explore the relationship between COVID-19 protocols and perceived online trust with online health information seeking intention (OHISI) and a moderating effect of perceived severity and perceived urgency.

Design/methodology/approach: Data are collected from 325 athletes in the category of individual and team sports through an online survey in a Likert-scale questionnaire. The analysis is performed with a quantitative methodology.

Findings: The study reveals the bright side of online health information (OHI), which brings athletes together and has played out with virtual happy hours, meetings and events. The bright side of OHI reflects social, cultural, technological and economic benefits. An OHI chatbot offers bright personalised side information to the individual seeker, which is more convenient and efficient than human capabilities.

Originality: The pivotal contribution is the integrated theoretical framework that is derived from multidisciplinary literature to capture the complexity of OHI. Also, it conceptualises the constructs in the context of OHI and COVID-19.

Keywords: Quarantine, Self-isolation, Social distancing, COVID-19, Online health information, Sports

Paper type Research paper

1. Introduction

For health outcomes, access to the Internet is beneficial (Whitacre and Brooks, 2014), and the healthcare industry has been revolutionised by the advancement of Internet related technology (Sarabdeen and Moonesar, 2018). Pharmaceuticals, medical equipment and consumables, waste management, information technology, catering, fleet management, and laundry services are all part of the healthcare industry, which comprises both products and services (Hossain and Thakur, 2020). For individuals seeking health information, the Internet has become one of the most valuable sources of information and a wide variety of channels for health information search have also been opened up by advances in social media and online health knowledge bases (Xia *et al.*, 2017). The production of health information on the Internet is also increasingly growing with online health information (hereafter, OHI) searches (Swar *et al.,* 2017). Unfortunately, OHI has limitations (Robertson-Lang *et al.,* 2011) and predominately suffers from the lack of quality, and reliability on social media and other online resources (Moorhead *et al.*, 2013). Therefore, both the bright and dark sides of OHI exist. Amidst Coronavirus disease 2019 (hereafter, COVID-19), the study describes online health information seeking intention (hereafter, OHISI) as an adaptive coping practice to seek assistance from the Internet to deal with mental health issues such as stress.

A severe acute respiratory syndrome Coronavirus infection outbreak occurred in Wuhan city, China in December 2019 and spread across China and beyond (Zu *et al.,* 2020). To mitigate the

spread of the COVID-19 virus, lockdown and social distancing measures were taken (Florido-Benítez, 2021). The COVID-19 induced lockdown created a conflict between public health and safety concerns and immediate negative impacts on the livelihood of people were observed (Alam *et al.*, 2021). Due to COVID-19, adverse circumstances elicited feelings of fear, helplessness, and stress and had a huge influence on life, such as depression, insomnia, traumatic experiences, etc (Edwards and Thornton, 2020). The breakout of COVID-19 has instilled an increasing sense of fear and apprehension among the general public (Ghosh and Sanyal, 2021). To survive the unrelenting onslaught of COVID-19, organisations and businesses made rapid and radical modifications to the way they operated in response to the global pandemic (Obembe *et al.*, 2021). Owing to COVID-19, many industries have been severely harmed as a result of the disruption of operations, which had a negative impact on the economy (Chakraborty and Kar, 2021). According to Gopal (2020), COVID-19 protocols include isolation, quarantine and social distancing.

The bright side of online information includes a favourable or hopeful health implication during COVID-19 turbulent times. It helps to clear the doubts regarding the ill-health symptoms by suggesting the websites that have information on the cause, treatment options and effective management of the condition by increasing knowledge and engagement in decision-making strategies for health (Iverson *et al.*, 2008). The dark side of online information represents the disinformation and misinformation about COVID-19. Disinformation is the intentional posting of false, fake or misleading information and misinformation is the unintentional posting of the same on the online platform. Due to the prevalence of the dark side of OHI in digital platforms, the use of misinformation/disinformation has become a health risk during the COVID-19 crisis (Allington *et al.*, 2020). As per Rainie and Fox (2000), 70% of health seekers state that the information they found in online sources has influenced them in their decision-making about their disease treatment. COVID-19 has been linked to a rise or fall in national pride (Lim and Prakash, 2021) and well-being is crucial throughout one's life in such a crisis (Srinivas *et al.*, 2021). In healthcare, quality management is beginning to understand the added benefit of illness prevention rather than disease assessment (Srinivas *et al.*, 2020). Therefore, doctors, nurses, pharmacists and other healthcare workers must share essential information on social media.

The literature on seeking OHI was appraised by a staged model of trust (Sillence *et al.*, 2007) and assessment of quality (Sillence *et al.*, 2006). Applicability and robustness of the behavioural skills model of data encouragement assess the use of dietary supplements in pregnant and breastfeeding women (Limbu *et al.*, 2020). Because of the novel COVID-19, there was a pandemic of information seeking, with widespread circulation of false or misleading health information (Cuan-Baltazar *et al.*, 2020). Misinformation exposure lowered information insufficiency, resulting in more information avoidance and heuristic processing, as well as less systematic COVID-19 information processing (Kim *et al.*, 2020). Centring on COVID-19, we could not find studies that empirically validated perceived stress using COVID-19 protocol, considered perceived urgency to measure the moderating effect between perceived stress and OHISI, and considered perceived severity to measure the moderating effect between COVID-19 protocol and perceived stress.

The literature outlined the need for future research on OHI and its related technology. Patients' simultaneous and appropriate use of diverse information sources in addition to comparing OHI is an essential study, given their usage of various information sources (Van Schaik *et al.,* 2019). To overcome restrictions and obstacles placed during the COVID-19 pandemic, the digital approaches have played and will play an important role, but several challenges still need to be overcome, hence further research is required (Badawy and Radovic, 2020). During the isolation period, the sports events that were suspended due to the COVID-19 pandemic have affected the mental health status of athletes (Şenışık *et al.,* 2020). During COVID-19, many athletes are facing stresses like their loved one's death, a serious personal illness, lack of physical activity, earnings loss due to the shutdown of competitive sport at all levels and thus succumbing to negative life events. During this turbulent time, athletes have been found searching for health-related topics online. Also, competitive athletes have been observed seeking OHI to verify if they are given evidence-based and best practices for the diagnosis, treatment and prevention of mental health issues. The gaps in the literature, call for future research and OHI related psychological behaviour of the athletes justifies the motivation of the study.

The research seeks to answer the research questions (hereafter, RQs), i.e., RQ1: How does COVID-19 protocols influence perceived stress? RQ2: How does online trust and perceived stress influence OHISI? RQ3: How does perceived severity moderates the relationship between COVID-19 protocols and perceived stress, and how does perceived urgency moderate the relationship between stress and OHISI? To address the RQs, the study aims to empirically measure and validate the OHISI due to the COVID-19 protocol. To achieve the mentioned aim, the study has formulated the objectives, i.e., (i) to conceptualise the constructs in the context of OHI and COVID-19; (ii) to propose an integrated theoretical framework with the discussion of the OHISI map and fact-checker system for the realisation of the bright side of OHI; (iii) to empirically measure OHISI. The integrated theoretical framework is discussed in the theoretical implication. The managerial implication discusses the bright side of OHI for physicians and OHI seekers. The findings 'we are social together' encourages communication among the athletes, the bright side of OHI reflects a social and technological benefit, and the OHI chatbot offers bright personalised information to the information seeker. The study enhances the complexity of OHI knowledge with an integrated theoretical framework and conceptualises the constructs in the context of OHI, OHISI and COVID-19.

The rest of the paper is organised into six sections. The theoretical background and hypothesis development are outlined in Section 2. The research methodology is presented in Section 3. The experimental results are presented in Section 4, followed by a discussion (i.e., Section 5) with theoretical implications, managerial implications and limitations and further lines of research. Finally, in Section 6, the conclusion is presented.

2. Theoretical background, conceptual model and hypotheses development

OHI improves information seekers' awareness, competence and involvement in health decision-making strategies (Iverson *et al.,* 2008). The most successful tool to protect against the COVID-19 crisis is public health awareness. It supports and reduces the spreading rate severity and

decreases the death rate, and precautionary measures are needed to contain this pandemic disease (Ali and Bhatti, 2020). Therefore, an integrated theoretical framework is needed to meet the objective of this study.

2.1. Theoretical background

Marton and Choo (2012) strongly stressed the need for multidisciplinary frameworks to capture the complexity of OHI. Therefore the study discussed the theoretical models from multidisciplinary literature i.e., Deterministic Epidemic Theory (DET), Protection Motivation Theory (PMT), Situational Awareness Theory (SAT), Self-Determination Theory (SDT), Online Health Information-Seeking Intention Model (OHISIM), Online Trust Model (OTM) and Sense-Making Theory (SMT). In addition, the study seeks to conceptualise the constructs in the context of OHI and COVID-19 from each theoretical model.

The justification for considering multidisciplinary literature is drawn from the viewpoint of constructs. The quarantine construct is extracted from DET, the self-isolation construct is extracted from PMT, the social distancing construct is extracted from SAT, and the perceived stress construct is extracted from SDT. The perceived urgency and perceived severity constructs are extracted from OHISIM followed by the discussion on OHISI benchmarking map. The online trust construct is extracted from OTM, followed by the discussion of the COVID-19 fact-checker system. The OHISI construct is extracted from SMT followed by the discussion on OHI dimensions. The constructs are further conceptualised in the context of OHI/COVID-19 with assertion (i.e., a precise, unambiguous, mathematical statement of the true effect). The notations and their definitions/descriptions used in each theoretical model are listed in Table AI in Appendix A. The significance of each theory is further discussed to present the logical and coherent idiographic explanations of our proposed integrated theoretical framework and to conceptualise the constructs in the context of OHI or/and COVID-19.

2.1.1. Deterministic Epidemic Theory (DET)

Ali *et al.* (2020) proposed a mechanistic model for the transmission dynamics of COVID-19 and included quarantine as a component. DET formulated a reproductive number (R_0) and revealed that the COVID-19 disease dies when $R_0 < 1$ and endemic when $R_0 > 1$. The objective of the theory is to assist healthcare decision-making for successful disease prevention. Quarantine leads to extreme limitations on one's activities, often leading to stress associated with not being able to fulfil one's professional and family duties (Gupta and Sahoo, 2020), so this justifies the consideration of the theory. The theory limits the transmission dynamics of COVID-19 to quarantine, and does not consider self-isolation, social distancing or how quarantine induces stress. Therefore, this justifies the consideration of the quarantine construct. Also, the model does not address the linkage of quarantine to OHI. Therefore, to conceptualise the construct in the context of OHI, assertion (i.e., assertion 1) is stated in Appendix A.

2.1.2. Protection Motivation Theory (PMT)

PMT is one of the most used theories to understand how individuals adopt promoted health measures, such as self-isolation (Rogers and Prentice-Dunn, 1997). PMT has been used during pandemics such as H1N1 (McNeill *et al.*, 2016), respiratory infections (Miller *et al.*, 2012) and

influenza (Williams *et al.*, 2014) to describe human behaviour. Despite much research on pandemic behaviour through the PMT lens, the existing literature has not discussed the effect of Internet sources on the motivation for protection and ultimately behavioural intentions in an exhaustive way (Farooq *et al.*, 2020). This justifies the consideration of the theory. PMT predates the outbreak of COVID-19, restrict the transmission dynamics to self-isolation and does not consider quarantine and social distancing. In addition, it does not address the linkage of self-isolation to OHI, which justifies the consideration of the construct. Therefore, to conceptualise the construct in the context of OHI and COVID-19, assertion (i.e., assertion 2) is stated in Appendix A.

2.1.3. Situational Awareness Theory (SAT)

Endsley (1995) presented a theoretical model of situation awareness based on its role in a variety of domains in dynamic human decision-making. Social distancing is significantly affected by situational awareness. It concludes that increasing situational awareness through structured knowledge channels in times of public health crisis will significantly increase the adoption of protective health actions and reduce the spread of infectious diseases (Qazi *et al.*, 2020). This justifies the consideration of the theory. SAT predates the outbreak of COVID-19, restricts situational awareness to social distancing and does not consider quarantine, or self-isolation. In addition, it does not address the linkage of social distancing to OHI, so this justifies the consideration of the social distancing construct. Therefore, to conceptualise the construct in the context of OHI and COVID-19, assertion (i.e., assertion 3) is stated in Appendix A.

2.1.4. Self-determination Theory (SDT)

In terms of public mental health, elevated stress rates are the biggest psychological effects of COVID-19 (World Health Organization, 2020). The SDT (Deci and Ryan, 1985) is a broad structure for understanding motivation and personality and discusses several concerns relating to stress phenomena (Weinstein and Ryan, 2011). It is more necessary than ever to prioritise and support the basic psychological needs of each other during a pandemic, such as COVID-19, which can provoke loneliness, anxiety, and feelings of helplessness (Neufeld and Malin, 2020). SDT predates the outbreak of COVID-19, emphasises stress, lacks a discussion on other traumatic events reactions (e.g., depression, fatigue, etc.) and does not address the linkage to OHISI, so this justifies the consideration of the theory and the foundation of the perceived stress construct. Therefore, to conceptualise the construct in the context of OHI and COVID-19, assertion (i.e., assertion 4) is stated in Appendix A.

2.1.5. Online health information-seeking intention model (OHISIM)

Xia *et al.* (2017) investigated how the purpose of Internet users to look for health information is influenced by problematic circumstances in two dimensions, i.e., urgency and severity. OHISIM predates the outbreak of COVID-19, and does not discuss the transmission dynamics or situational awareness or traumatic events reactions, so this justifies the consideration of the theory and the foundation of perceived urgency and perceived severity constructs. Also, the model does not address the linkage of perceived urgency and perceived severity to OHISI. Therefore, to

conceptualise the constructs in the context of COVID-19, the research introduced the OHISI benchmarking map, and is presented in Figure 1.

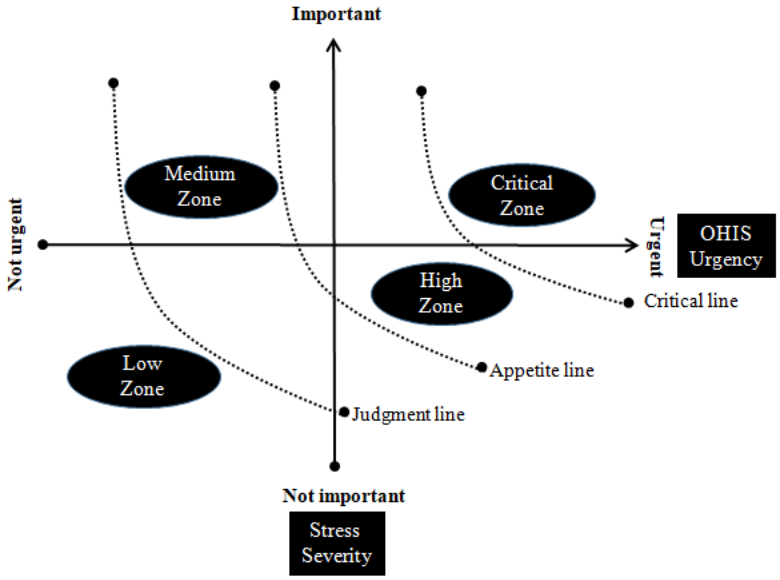

Figure 1: OHISI benchmarking map

The OHISI benchmarking map is grounded on (Hopkin, 2018) and provides with a realistic analysis for accessing OHI and illustrates four zones: critical, high, medium, and low, separated by three lines, namely judgment, appetite and critical. The low zone is predominantly for not important severity/not urgent urgency and signifies an individual with no severity of stress and has no urgency to seek OHI. In this zone, an individual should maintain and monitor the stress severity. The medium zone is for important severity/not urgent urgency, and signifies an individual with stress severity, and has no urgency to seek OHI. In this zone, an individual should prevent the stress severity by not seeking the dark side of OHI and rather, seeking the bright side of OHI. The high zone is for not important severity/urgent urgency, and signifies an individual with no severity of stress, and has an urgency to seek OHI. In this zone, an individual should prepare not to seek the dark side of OHI and rather to seek the bright side of OHI. The critical zone is for important severity/urgent urgency, and signifies an individual with the severity of stress. It has an urgency to seek OHI, and in this zone, an individual should prevent and mitigate the stress severity by seeking only the bright side of OHI.

As the stress severity increases, the individual in the low zone reaches a point where judgment is required as to whether it should be tolerated or not. Judgment is required in the medium zone, and action usually has to be taken with a focus on prevention. The individual in the medium zone, as the OHIS urgency increases, an appetite point is reached with entry to the high zone and hence, the action usually has to be taken with the mitigation focus. As the stress severity and OHIS urgency further increases, a critical line is reached. When an individual is above the critical line, the action usually to be taken is the focus on prevention and mitigation.

2.1.6. Online Trust Model (OTM)

Considerable media attention has been gained by the threat of misinformation online and plausible strategies to address misinformation have often been less than satisfactory (Khan and Idris, 2019).

The spread of online misinformation and fake news has piqued interest in recent years, since it has ideologically split society and resulted in social instability, weakened democracies and other effects (Au *et al.*, 2021). Corritore *et al.* (2003) defined online trust for the person towards a particular information website as an attitude of confident expectation that one's vulnerabilities in an online situation of risk will not be exploited. The key dimensions of online trust are generality (the breadth of the trust), kinds (cognitive and emotional trust), degrees (the depth of trust that a person has) and stages (initial development of trust to mature trust) (Corritore *et al.*, 2003). OTM predates the outbreak of COVID-19, emphasises online trust, does not discuss the transmission dynamics or situational awareness or traumatic events reactions, so we choose this as the foundation of the online trust construct and this justifies the consideration of the theory. Few studies examine trust in the e-health sector (Hong *et al.*, 2019). Therefore, to address the research gap and conceptualise the construct in the context of OHI and COVID-19, assertion (i.e., assertion 5) is stated in Appendix A, followed by the fact-checker system for the realisation of the bright side of OHI.

2.1.7. Sense-Making Theory (SMT)

Sense-making is the mechanism that people use to provide their experiences with meaning (Xia *et al.*, 2017). The introduction of SMT by (Dervin, 1983) in the field of information science had a profound impact on the study of information behaviour and the approach to established theories about the 'cognitive gap' that can be experienced by individuals, while attempting to comprehend observed evidence to provide measures of concepts, performance and ways to test theories (Xia *et al.*, 2017). SMT emphasises the influence of the situation on information resources and the selection of content and does not discuss the transmission dynamics or situational awareness or traumatic events reactions or online trust, so we choose this as the foundation of the OHISI construct and this justifies the consideration of the theory. However, the theory does not link OHISI to COVID-19. Therefore, to address the research gap, dimensions of OHI are presented.

Search patterns for OHI are defined by three dimensions: search frequency, search diversity, and preference for using the Internet (Xiao *et al.*, 2014). The frequency of searches reflects how much a person searches online for health information and captures the effort and propensity of a person to use the Internet for health information. During the online health information search process, a seeker uses various online health information searches as a range of health-related online resources such as traditional websites to social media, including blogs and online communities. Although healthcare providers remain the predominant, formal, and perhaps the most trustworthy sources of information because of their ease, flexibility, immediacy, and the vast array of information, the Internet is increasingly used by individuals to search for health information. Therefore, when individuals face health issues, the Internet is used to perform the initial search.

2.2. Integrated Theoretical Framework

As each underlying theory (as discussed in Section 2.1) exists as a standalone model, there is a need to integrate it to meet the aim of this study. Table I summarises the core aspect of the underlying theory and the gaps. Therefore, the objective of the integrated theoretical framework is to demonstrate how each theory fits into the lens of OHI or health measures or COVID-19. The

linkage between the theories is as follows: DET is connected to SDT from the perspective of OHI and health measures (i.e., stress). PMT is connected to SDT from the perspective of OHI, COVID-19 and health measures (i.e., stress). SAT is connected to SDT from the perspective of OHI, COVID-19 and health measures (i.e., stress). OHISIM is connected to SDT from the perspective of OHI severity, COVID-19 and health measures (i.e., stress), and connected to SMT from the perspective of COVID-19, OHI urgency and OHISI. SDT is connected to SMT from the perspective of COVID-19, OHISI and its dimension. OTM is connected to SMT from the perspective of COVID-19, OHISI and its dimension.

Table I: Core aspect of underlying theory and literature gaps

Theory	Core aspect	Gaps
DET (Ali *et al.*, 2020)	Describe transmission dynamics of COVID-19 with the consideration of the role of asymptomatic individuals as well as the consequences of quarantine and isolation.	Does not address the linkage of quarantine to OHI.
PMT (Rogers and Prentice-Dunn, 1997)	Describe what motivates people to react in a self-protective manner in the face of a perceived health threat.	Does not address the linkage of self-isolation to OHI and COVID-19.
SAT (Endsley, 1995)	Describe situational awareness in decision-making in complex situations which consists of a person's understanding of a changing environment.	Does not address the linkage of social distancing to OHI and COVID-19.
SDT (Deci and Ryan, 1985)	Proposes that when people's needs for competence, connection, and autonomy are met, they can become self-determined.	Does not address the linkage of perceived stress to OHISI.
OHISIM (Xia *et al.*, 2017)	Discuss how negative situations affect online user's intentions when looking for health information.	Does not address the linkage of perceived urgency and perceived severity to OHISI.
OTM (Corritore *et al.*, 2003)	Investigates user-website trust, particularly trust between people and informational or transactional websites.	Does not address the linkage of online trust to OHI and COVID-19.
SMT (Dervin, 1983)	Discussed how to use online information query and usage behaviour in specific settings, such as when dealing with a health information system.	Does not address the linkage of OHISI to COVID-19.

Integrating the best elements of the existing theories better explains the phenomenon of the study and is considered one of the best practices of theoretical integration (Brown *et al.*, 2018). Manoukian *et al.* (2015) used constructs in the theoretical framework. Based on the above discussion, the study considered constructs as the best element and demonstrated the integration of the theoretical framework from the perspective of constructs and their dimensions (See Figure 2). In Figure 2, bold narration represents the name of the theory (e.g., Deterministic Epidemic Theory), italic narration represents the construct (e.g., Quarantine) and the dotted rectangles represent the associated dimensions of the construct (e.g., OHISI are characterised by three dimensions, namely the search frequency, search diversity, and preference). The solid arrow represents the direct effect and the dotted arrow represents the moderating effect. Figure 2 sets the foundation of the conceptual hypothesis model, discussed in the follow-up section to embody the specific direction by which this study has been undertaken to meet the objective.

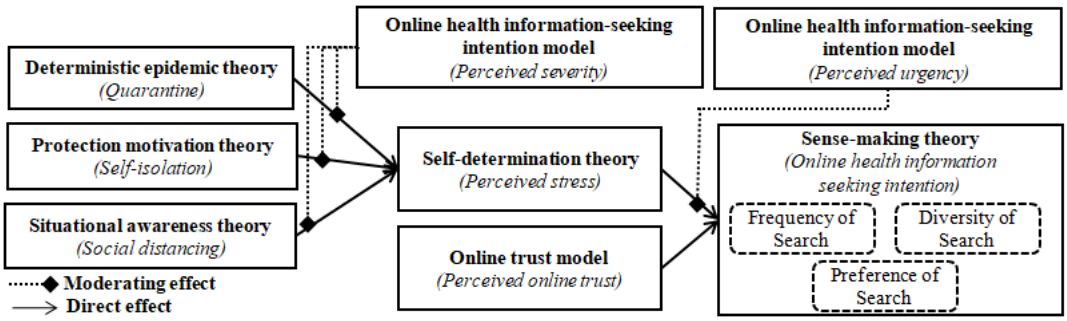

Figure 2: Integrated theoretical framework

2.3. Conceptual hypothesis model

The constructs for this study are outlined in Table II for setting the context for hypothesis development. The rationale behind the consideration of the constructs, as outlined in Table I, is further justified.

Table II: Construct definition

Construct	Definition	Source/Reference
Quarantine	We define it as the characteristics of separating and limiting the movement of individuals who are exposed to COVID-19 or are potentially exposed to it.	Ali *et al.*, 2020
Self-isolation	We define it as when an individual is confirmed to have COVID-19 and has to isolate themselves from the individuals around them who are healthy.	Rogers and Prentice-Dunn, 1997
Social distancing	It is characterised by the measures taken to slow or avoid COVID-19 by maintaining a distance of at least six feet from others and staying out of crowded places.	Behar-Zusman *et al.*, 2020
Perceived stress	We define it as the degree to which quarantine, self-isolation and social distancing situations in one's life are considered stressful, which influence adaptive or maladaptive behavior amid COVID-19.	Deci and Ryan, 1985
Online health information seeking intention	We define it as is the individual's intention to seek health information on the Internet amid COVID-19.	Xia *et al.*, 2017
Perceived online trust	We define it as the degree of trustworthiness attitude of confident anticipation in COVID-19 online health information.	Corritore *et al.*, 2003
Perceived severity	We define it as the degree to which an individual engages in preventive or permissive action, depending on how serious he/she considers the consequences of COVID-19.	Weinstein, 2000
Perceived urgency	We define it as the degree to which one is experiencing a painful or worry condition which leads them to seek health information on the Internet amid COVID-19.	Edworthy *et al.*, 1991

As a result of the quarantine, people requested full time 'work from home' (WFH) (Wang *et al.*, 2020) and following the transition to WFH, physical and mental illnesses have risen (Xiao *et al.*, 2021). Any workers with symptoms or who were tested positive for COVID-19 are subject to a minimum of days of self-isolation period (Salami *et al.*, 2021), which has health consequences ranging from sleeplessness to reduced immune function. To slow the spread of the COVID-19 virus, governments around the world have instituted social distancing measures (Arli *et al.*, 2021). Individual social distancing based on one's health status is certainly undoubtedly in the spread of infectious disease and influences the welfare loss associated with it (Fenichel *et al.*, 2013). The

rapid development of the COVID-19 pandemic has a significant impact on people's physical health, but it also poses a serious threat to their mental health, resulting in an increase in perceived stress (Zhang *et al.*, 2021).

Literature has identified factors that impact stress from mental conditioning to quality of food (Sumaedi *et al.*, 2021; Najem *et al.*, 2020), communication (i.e., communication stress from face mask) (Campagne, 2021), strategic posts on social media or actions aimed at ensuring sustainability (Yadav *et al.*, 2021), and those factors are outside the preview of this study. The intention of consumers to seek health information predicts their intention to use such information from social media in a substantial way (Wu *et al.*, 2018). Perceived online trust in e-service providers has been investigated in a number of domains and has been found to be a positive and direct motivator of users' intention to engage in particular online behaviours (Mansoori *et al.*, 2018; Casey and Wilson-Evered, 2012). A higher risk assessment may result from a higher perceived severity (Huang *et al.*, 2011). The extent to which an external stimulus elicits (e.g., the adverse impact of COVID-19 in society) response is determined by how an individual feels the need of perceived urgency to act (Hoffmann and Plotkina, 2020).

2.4. Hypothesis development

Figure 3 depicts the conceptual hypothesis model, based on hypotheses and constructs, wherein hypotheses H1 to H5 represent the direct effect, H6a to H6c and H7 represent the moderating effect. A conceptual hypothesis model allows representing the phenomenon of OHISI, the formulated hypotheses are an attempt to explain and provides the ability to present the empirical results. Athletes are more health aware and in constant touch with physiotherapists and doctors. They are also more aware of the impacts on physical health due to false steps or the adverse impacts of COVID-19 protocol. They also need to be more careful with the drugs that they consume in order to comply with the requirements of doping agencies. The conceptual model does not contain athletes' specific constructs as the study intends to generalise the outcome not only for athletes or health enthusiasts, but for the general public. Older age people are less tech-savvy than those of a younger generation (Ross, 2021), and they are less likely to use technology, and health-related behaviours are linked to age (Deeks *et al.*, 2009). Therefore, the study seeks to use age as a covariate for the relation to perceived stress and online health information seeking intention.

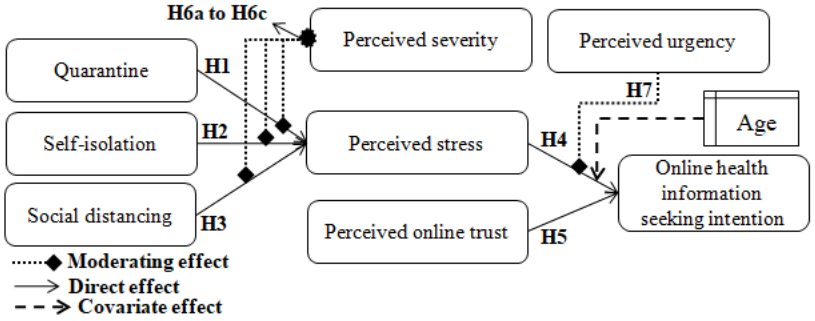

Figure 3: Conceptual hypothesis model

The study's goal is to use hypotheses to validate the RQs. Hence, RQ1 relates to hypotheses H1 to H3. RQ2 relates to hypotheses H4 and H5. RQ3 relates H6a to H6c and H7. Each of the hypotheses is discussed below.

2.4.1. Quarantine and perceived stress

A unique feature of COVID-19 is that when people receive mixed messages and are not sure how to proceed, and hence, quarantine can produce an enormous amount of stress. Prior research has examined that depression, anger, and chronic stress are associated with mass quarantine, and self-quarantine (Mattioli *et al.*, 2020). Various research studies on stress have been carried out among healthcare workers, put in quarantine amid COVID-19 (Uvais *et al.*, 2020). Psychological distress in the form of anxiety, anger and post-traumatic stress symptoms can be encountered by the people in quarantine (Brooks and Smith, 1987). Acute stress disorder, adjustment disorder and grief are more likely to occur in children who are quarantined in local hospitals or collective medical observation centres (Liu *et al.*, 2020). Individuals who are quarantined because of COVID-19 have higher levels of addictive social media use (SMU), which is associated with stress (Brailovskaia *et al.*, 2021). During COVID-19, individuals were given psychoeducation in the form of a video clip or an article about what to do during quarantine and stress management strategies that they could undertake (Lerthattasilp *et al.*, 2021). We advocate that the phenomenon of quarantine may lock up individual mental health cycles and the mental health strategy for COVID-19 is dominated by concerns about the incidence of stress. Therefore, it is hypothesised:

H1. *Amid COVID-19, quarantine is positively linked to perceived stress.*

2.4.2. Self-isolation and perceived stress

While in self-isolation, exposure to COVID-19 news can cause anxiety, concern and stress, which can lead to irritability, unhealthy eating and sleeping patterns, depression and attention, and focus difficulties. Prior research has examined that if self-isolation is prolonged, persistent loneliness is likely to minimise physical activity, leading to an increased risk of stress (Mushtaq *et al.*, 2014). Those with an anxiety-related mood or disorder showed substantially higher stressors in self-isolation (Asmundson *et al.*, 2020). It has been found that people with COVID-19 stress syndrome are consciously seeking to find ways of making self-isolation more tolerable (Taylor *et al.*, 2020a). Depression, anger, and chronic stress are associated with self-isolation (Mattioli *et al.*, 2020). COVID-19 has caused social and psychological changes, such as self-isolation and stress (Bradbury-Jones and Isham, 2020; Lufkin, 2020). We advocate that during this unparalleled time of self-isolation, stress symptoms, confusion and anger have long-lasting effects. Therefore, it is hypothesised:

H2. *Amid COVID-19, self-isolation is positively linked to perceived stress.*

2.4.3. Social distancing and perceived stress

Amid COVID-19, social distancing can make people feel isolated, and alone, thus leads to increasing stress. Prior research has examined that the elements of life disturbance, fear, stress, confusion and financial effects are shared through social distancing (Behar-Zusman *et al.*, 2020). Social distancing activity is correlated with acute stress (Marroquín *et al.*, 2020). Social distances during the lockdown may be viewed as a stressful situation for children and teenagers who were unable to attend kindergarten or school and were unable to pursue activities such as athletics or meeting friends (Tittel *et al.*, 2020). Stress and coping responses due to COVID-19 social distancing were reported in the USA (Park *et al.*, 2020). The effects of social distancing policies

are linked to greater COVID-19 related stress levels (Robillard *et al.*, 2021). COVID-19 fear leads people to take stress-inducing social distancing tactics (Naveed *et al.*, 2021). We advocate that socially distanced individuals will experience mental health issues such as stress, insomnia, emotional fatigue, and drug abuse, both short and long term. Therefore, it is hypothesised:

H3. *Amid COVID-19, social distancing is positively linked to perceived stress.*

2.4.4. Perceived stress and online health information seeking intention

Most of us do it, for someone we care about, if not for us. Amid COVID-19, before we know whether or not to consult a physician, we search for symptoms and self-diagnosis on the Internet to lower stress levels. Prior research has examined that as a coping mechanism to alleviate health-related stress and concerns, online health information searching functions i.e., when people rate their health as poor or feel stressed, they often visit the Internet to search for health-related information to understand their symptoms and treatments (Oh and Song, 2017). Nearly two-thirds reported seeking online health information about a particular disease or medical condition and half reported seeking information about a particular medical treatment or procedure (Chisolm, 2010). A lot of work has been dedicated to researching how people in health crises seek online health information (Meadows *et al.*, 2019; Park *et al.*, 2019; Avery, 2017; Hu and Zhang, 2014; Avery, 2010). During the COVID-19 pandemic, taking a social media break to promote well-being, which is critical for reducing mental health harm inflicted by the pandemic (Zhong *et al.*, 2020). The COVID-19 induced stress has the potential to worsen a pre-existing reluctance to seek formal support (Ménard *et al.*, 2022). Patients who are more active in how to handle stress are more likely to seek health information from a variety of sources, including sources other than the Internet (Waring *et al.*, 2018). We advocate that online health information seeking should relieve health-related stress. However, it cannot be denied that the dark side of OHI can create more stress and emotional anguish among individuals. So, considering the bright side of OHI, it is hypothesised:

H4. *Amid COVID-19, perceived stress is related to an increased level of online health information seeking intention.*

2.4.5. Perceived online trust and online health information seeking intention

Terabytes of data are now available online and it is often difficult to distinguish between true/false and relevant/irrelevant data. This is particularly important in the case of health information, because people's well-being is at stake. However, most medical professionals cannot help an individual with instructions to surf through the irrelevant OHI to find the most useful tips, tricks, treatments or advice. Therefore, trustworthy OHI has the power to drive an individual to more education. Prior research has examined that for individuals, health websites are valuable sources of information, and when selecting websites, trust in websites largely defines which website to access and how the information can be used best; therefore, it is important to know why the information seeker trusts some websites and mistrust others (Kim, 2016). Trust is considered a major determinant of the adoption of e-services (Mou *et al.*, 2017). The quality of online health information remains questionable and trustworthiness has become a hot topic (Ye, 2010). A major predictor of online health activities was found to trust in online health information (Hou and Shim, 2010). Trust in OHI plays an important role in providing users access to health information (Ozawa

and Sripad, 2013). Trust has a big impact on how people seek online health information (Freeman *et al.*, 2018). The intention to seek and disclose health information is determined by trust (Bansal and Gefen, 2010). We advocate that the content of the health website affects the intent to use the website when users have trust. Therefore, it is hypothesised:

H5. *Amid COVID-19, perceived online trust in health websites or social networking health portals is positively linked to online health information seeking intention.*

2.4.6. Moderating role of perceived severity

Sedentary behaviour and low levels of physical activity can adversely affect the health, well-being and quality of life of individuals. Quarantine, self-isolation and social distancing can cause stress and challenge the mental health of an individual. Prior research has examined that self-isolated people experience stress at substantial levels (Pera, 2020; Taylor *et al.*, 2020a). A higher perceived level of severity of COVID-19 led individuals to be afraid of interaction with the outside world, leading to limited activities which could lead to stress (Deng *et al.*, 2020). The perceived severity of the COVID-19 outbreak in individuals is connected to more undesirable emotional and behavioural results in the Chinese public and it indicates a substantial negative impact on mental health outcomes (Li *et al.*, 2020). A sudden rise in psychological distress has been triggered by restricted activities, resulting in varying levels of mental stress (Qiu *et al.*, 2020; Xiang *et al.*, 2020; Zhang *et al.*, 2020). COVID-19 severity is linked to stress during lockdown, quarantine, self-isolation and social distancing (Wu *et al.*, 2021). We advocate that amid COVID-19, the restricted access due to quarantine, self-isolation, and social distancing has caused stress severity stages like alarm, resistance, and exhaustion among individuals. Therefore, it is hypothesised:

H6a. *Perceived severity moderates the relationship between quarantine and perceived stress.*

H6b. *Perceived severity moderates the relationship between self-isolation and perceived stress.*

H6c. *Perceived severity moderates the relationship between social distancing and perceived stress.*

2.4.7. Moderating role of perceived urgency

Urgency does not equal anxiety. In a sense of urgency, seeking the bright side of online health information has a useful and beneficial impact on stress management. In reality, accurate and trustworthy online health information comes to the rescue when an effort to increase urgency results in a rise in concern. Prior research has examined that in chronic health conditions, young adults seek online information about medication side effects with priority (Lee *et al.*, 2014). In an emergency, older patients were more likely to find health information from their doctor than from the Internet, and in contrast, younger patients were more likely to find health information more accessible on the Internet than from their doctors (Scott *et al.*, 2017). Research has shown that OHI is more likely to be used by less healthy people relative to those who report better health status (Cotten and Gupta, 2004). We advocate that amid COVID-19 mental health urgency, perceived urgency plays a key role in seeking online health information. Therefore, it is hypothesised:

H7. *Perceived urgency moderates the relationship between perceived stress and online health information seeking intention.*

3. Research methodology

The methodology is structured into six subsections. It first discusses the data sources and data collection procedure. This is followed by sampling techniques and measures. Subsequently, it discusses measurement items for the OHISI dimension, followed by the common method bias. Finally, data analysis concludes this section.

3.1. Data source and data collection procedure

The sources of the data were athletes in the category of individual and team sports. The individual sports for this study include badminton, golf, swimming, weightlifting, table tennis, cycling and squash. The team sports include football, basketball, handball and volleyball. In an individual sport, the participant participates as an individual to compete with the individual opponent, whereas a team sport includes individuals who are organised into a team to compete with the opponent team. The authors interacted with those athletes who were conveniently available to participate in the study. The eligibility criteria of the athletes for the survey are inclusion criteria: aged ≥ 18 years on the date of survey, read and write in English or Hindi, and adherence to COVID-19 guidelines imposed by the government and Indian citizens. Exclusion criteria: lack of Internet access and lack of ability to complete the online survey.

Table III lists the responders as well as their profiles, wherein athletes are categorised into individual and team sports. In the table, the majority of the respondents were in the 18-29 years of age group and contributed 77% of the individual category and 73% of the team category.

Table III: Sports category and respondent profile

Characteristics	# of athletes	% of athletes	Age			
			18-29	% of 18-29	30+	% of 30+
Category						
Individual	**175**	**54%**	**135**	**77%**	**40**	**23%**
Badminton	40	23%	35	87%	5	13%
Golf	25	14%	5	20%	20	80%
Swimming	35	20%	32	91%	3	9%
Weightlifting	15	9%	12	80%	3	20%
Table Tennis	30	17%	26	86%	4	14%
Cycling	20	11%	16	80%	4	20%
Squash	10	6%	3	30%	7	70%
Team	**150**	**46%**	**110**	**73%**	**40**	**27%**
Football	60	40%	45	75%	15	25%
Basketball	40	27%	35	87%	5	13%
Handball	15	10%	10	67%	5	23%
Volleyball	35	23%	20	57%	15	43%
Total	325	100%	245	75%	80	25%

Several obstacles were encountered while gathering consistent and quality data. Therefore, we followed a practical, law-compliant method and took suitable safeguards to overcome them, such as keeping the survey language and format simple, ensuring respondent privacy, translating questions to Hindi by professional translators, recording and sharing of the conversations, allowing limited participation in the video calls, taking time break during the interview, offering technical

support while filling responses, remaining flexible to interview time and maintaining professional attitude during the video call.

3.2. Sampling

India was buckling under the COVID-19 pandemic and the sports sector was hard hit (Majumdara and Nahab, 2020). Similar situations prevail globally wherein (Woods *et al.*, 2022) the suspension of athletics has negative effects on athletes. Convenience and snowball sampling were the only options available to the authors for data collection. Convenience sampling has been generally accepted and is cost-effective (Ruhl, 2004), entails getting athletes based on their availability and convenience and demonstrates empirical phenomena similar to random sampling (Peterson and Merunka, 2014). A total of eleven sports governing bodies from India agreed to participate, out of which one did not submit in due time, two did not fill completely, and one did not fill correctly. So, a total of seven valid governing body responses were considered for further analysis.

After the identification of the sport's governing body using convenience sampling, the snowball sampling technique was used for the collection of athletes' responses to the quantitative study. Snowball sampling is useful in COVID-19 and has been used widely during COVID-19 (Geana, 2020; Roy *et al.*, 2020; Liang *et al.*, 2020). The data were collected through an online survey and in two waves i.e., Wave 1 (10th June 2020 to 7th August 2020) and Wave 2 (17th August 2020 to 18th September 2020).

Since India was under lockdown, site visits and travel were not an option, so the remote virtual interview was the only option left. Ten interviewers, who were well prepared for conducting personal interviews in English and Hindi, performed the interview using video calls. For those who were not versed in English, the interviews were conducted in Hindi. The author links were used to identify the contact person of the sport's governing body. The survey questions and contact details of the sport's governing body were handed over to interviewers via email. The interviewers contacted the sport's governing body and collected responses via email in two waves. For non-English speaking responders, the responses were collected in Hindi and then translated into English by interviewers. In the first wave, responses were low, and hence, in the second wave, periodic follow-ups were taken by the interviewers for the timely completion of data collection. A total of 1745 athletes agreed to participate and a total of 325 valid responses were considered for further analysis. Wave 1 collected 30% of the legitimate responses, with the remainder collected in Wave 2. The sampling formula considered for this study is $n = \frac{\mathrm{N}}{[1+\mathrm{N}*e^2]}$ where n is the sample size, N is the population and e is the margin of error. The population is 1,385 respondents, the sample size is 325 and the value of e is 5%, which signifies a 95% confidence level. The sampling formula is adopted from Bag *et al.*, (2020).

3.3. Measures

The Likert scale questionnaires were designed considering the COVID-19 situation. The measurement item of quarantine (QU), self-isolation (SI), and social distancing (SD) were adopted from (Forte *et al.*, 2020), Perceived stress (PS), and Online health information seeking intention (OHISI) were adopted from (Taylor *et al.*, 2020b), perceived online trust was referred from

(Corritore *et al.*, 2005) and perceived urgency was referred from (Xia *et al.*, 2017). Details of the questionnaire are presented in Table BI in Appendix B.

For the perceived online trust and perceived urgency construct, we performed qualitative research to validate the established measurement item and a semi-structured in-depth video call interview with respondents to explore the possibility of new/modified/deleted measurement items that might be more suitable for the COVID-19 situation. The semi-structured questionnaire was prepared with a combination of deductive and inductive approaches. We considered the measurement items from the literature (deductive), asked the respondents about online trust and urgency amid COVID-19 (inductive), and collected their responses. The process continues with as many respondents till saturation (no new responses) were obtained. The saturation point was thirty respondents from individual sports, and twenty respondents from team sports. Then, we analysed all the qualitative responses and found that the responses fell into three items for each. It is primarily due to the behavioural patterns of such items.

3.4. Measurement items for OHISI dimension

The measurement items for the OHISI dimension are depicted in Table BII in Appendix B. It consists of the dimensions such as frequency of search, diversity of search and reference of search. The questionnaires for three dimensions of OHI were adopted from (Xiao *et al.*, 2014).

3.5. Common method bias

This study is a self-reported survey with respondents being asked to respond to a standard scale of constructs and respondents being given questions that affect both independent and dependent variables simultaneously, which makes them prone to common method bias (CMB) (Podsakoff *et al.*, 2003). As a result, it employed Harman's single-factor test, the most used method for evaluating CMB (Malhotra *et al.*, 2006). According to Harman's single-factor test, the calculated cumulative variance value of 25.009% is considerably below the 50% criteria, demonstrating the absence of the CMB.

3.6. Data analysis

The research validity was tested using Exploratory Factor Analysis (EFA) with IBM SPSS Modeler and Confirmatory Factor Analysis (CFA), Structural Equation Modeling (SEM) with IBM AMOS. EFA is a commonly used statistical tool for determining the validity of instruments (Hoban *et al.*, 2005). Hypothesised models in CFA reflect an approximation to reality (Marsh *et al.*, 1998) and SEM is typically employed as a structural analysis for a model's covariance (Cao *et al.*, 2012). AMOS was employed because the study is a factor-based model. Because of the graphical interactivity of statistical analysis, the IBM SPSS Modeler is used. The sample size of 325 falls within the range of 200 to 400 when utilising SEM as a data analysis method (Hair *et al.*, 2006).

4. Results

The result is a two-step procedure (Anderson and Gerbing, 1988) that uses a measurement model and a structural model to determine the validity and reliability of the constructs.

4.1. Measurement model

The purpose of the data analysis and result was to determine the construct's validity and reliability before analysing the proposed model's structural relationships (Anderson and Gerbing, 1988). The convergent reliability of all factors considered in the measurement model is reached when factor loading (FL), average variance extracted value (AVE) values are greater than 0.5 (Hair *et al.*, 2006) and Cronbach's alpha (CA), composite reliability (CR) values are greater than 0.7 (Fornell and Larcker, 1981). Table IV presents the constructs' CA, CR, and AVE, as well as the items' FL.

Table IV: Convergent Validity, Internal Reliability and Descriptive Statistics

Construct	Items	FL	CA	CR	AVE	Mean	SD
Quarantine (QU)	QU1	0.822	0.824	0.841	0.573	3.27	0.95
	QU2	0.768					
	QU3	0.763					
	QU4	0.671					
Self-isolation (SI)	SI1	0.796	0.849	0.853	0.594	2.98	1.03
	SI2	0.819					
	SI3	0.734					
	SI4	0.866					
Social Distancing (SD)	SD1	0.808	0.889	0.891	0.673	2.6	1.29
	SD2	0.832					
	SD3	0.809					
	SD4	0.907					
Perceived Stress (PST)	PST1	0.817	0.946	0.947	0.783	3.36	1.03
	PST 2	0.844					
	PST3	0.806					
	PST4	0.884					
	PST5	0.861					
Perceived Severity (PSE)	PSE1	0.860	0.862	0.862	0.676	3.15	0.99
	PSE2	0.848					
	PSE3	0.855					
Perceived Online Trust (POT)	POT1	0.778	0.738	0.761	0.545	3.54	1.18
	POT2	0.836					
	POT3	0.527					
Online Health Information Seeking Intention (OHISI)	OHISI1	0.730	0.773	0.792	0.573	3.48	1.26
	OHISI2	0.768					
	OHISI3	0.538					
Perceived urgency (PU)	PU1	0.886	0.874	0.874	0.699	3.29	1.04
	PU2	0.880					
	PU3	0.866					

The table depicts the constructs used in this research that have CA, CR values of more than 0.7, and FL, and AVE values are more than 0.5. It is, therefore, concluded that the factors in the measurement model are reasonably reliable and the requirements of the convergent validity criteria have been met. The table also depicts the descriptive statistics covering the mean, standard deviation (SD), skewness and kurtosis of each construct.

Table V indicates that in the corresponding rows and columns, all diagonal elements were greater than off-diagonal elements, and all estimates of inter-correlation were less than 0.680, indicating that the discriminant validity was met.

Table V: Correlation matrix of constructs

Construct	OHISI	PST	POT	PU	QU	SI	SD	PSE
OHISI	**0.757**							
PST	0.371	**0.884**						
POT	0.680	0.191	**0.738**					
PU	0.194	0.271	0.020	**0.836**				
QU	0.321	0.591	0.143	0.168	**0.757**			
SI	0.285	0.402	0.158	0.095	0.364	**0.770**		
SD	0.230	0.329	0.192	0.151	0.320	0.185	**0.820**	
PSE	0.246	0.299	0.167	0.005	0.364	0.004	0.222	**0.822**

4.2. Structural model

Table VI captures the summary of the direct effect and the p-value of such relations. A p-value of less than 0.05 indicates that the hypothesis should be accepted (Zaykin *et al.*, 2002). Thus, H1, H2, H3, and H4 were supported. The triple star (i.e., ***) in the table denotes a p-value of less than 0.001. The hypothesised relationship between dependent variable and independent variables is described by the path coefficient (β).

Table VI: Hypothesis result of direct effect

Hypothesis	Relation	β	Std. Error	t-value	p-value	Supported?
H1	QU→PST	0.458	0.065	7.470	***	Yes
H2	SI→PST	0.253	0.058	4.656	***	Yes
H3	SD→PST	0.154	0.042	2.977	0.003	Yes
H4	PST→OHISI	0.219	0.048	4.485	***	Yes
H5	POT→OHISI	0.648	0.071	9.241	***	Yes

The results of the moderating effect of perceived severity and perceived urgency are summarised in Table VII. The triple star (i.e., ***) in the table denotes a p-value of less than 0.001. The analysis showed that H6a to H6c and H7 are supported.

Table VII: Results for the moderating effects

Hypothesis	Relationship	Std. Error	t-value	p-value	Supported?
H6a	QU→PSE	0.066	5.768	***	Yes
H6b	SI→PSE	0.065	-2.194	0.028	Yes
H6c	SD→PSE	0.048	2.391	0.017	Yes
----	PSE→PST	0.059	2.008	0.037	Yes
H7	PST→ PU	0.066	4.248	***	Yes
---	PU → OHISI	0.044	2.527	0.012	Yes

The R^2 value of OHISI is 0.497, and such value provides evidence of the potential value of the model. The reference value in the range of 1-3 for CMIN/DF (Hooper *et al.*, 2008), 0.05 - 0.1 for RMSEA (MacCallum *et al.*, 1996), and greater than 0.9 for IFI, TLI, and CFI (Hair *et al.*, 1998) reflect absolute fit. Our model reported 1.808 in CMIN/DF, 0.050 in RMSEA, 0.947 in IFI, 0.947 in CFI, and 0.941 in TLI, thus, suggesting an absolute fit.

4.3. Covariate analysis

Table VIII captures the summary of the covariate (i.e., age) effect on the relation between PST and OHISI. For the analysis, data were divided into two groups (namely, 18-29 and 30+) by age and validated separately in the model. The multi-group evaluation criteria were then conducted to determine whether age controls the OHISI. The multi-group analysis showed that age did not differ between the 18-29 and 30+ groups. It is primarily due to the fact that athletes, irrespective of age,

believe the Internet is a good source of information on COVID-19 and the bright side of OHI offers a wide range of health related topics. They are willing to take advantage of such opportunities. The triple star (i.e., ***) in the table represents the p-value of less than 0.001.

Table VIII: Results for the age effect for OHISI

Age	Std. Err.	t-value	p-value	Supported?
18-29	0.061	3.932	***	Yes
30+	0.068	2.238	0.025	Yes

4.4. OHISI dimension analysis

The OHISIS dimensional analysis of the frequency of search reveals that athletes in the age group of 18-29 seek more OHI in comparison to the 30+ age group. For both categories, nearly 90% of athletes have explicitly searched for online details about COVID-19. Seeking OHI, an increase of 60% for the age group of 18-29 and 45% for the 30+ age group has been reported before COVID-19 and during COVID-19. The age range of 18-29 athletes searches for advice or information about COVID-19 once a week, followed by once a month, and for 30+ age athletes, it stands once a month, followed by once a week.

The OHISIS dimensional analysis of the diversity of searches reveal that athletes seek OHI in the chronological sequence of prevention tips, healthy lifestyle advice, looking for health or medical information, and participation in an online support group for people with similar health or medical issues. The OHISIS dimension analysis in reference to search reveals that athletes seek OHI in the chronological sequence of the world health organisation, government agency sources, social media sources, and dedicated COVID-19 hospital telephone information number.

5. Discussion

The proposed research model consists of four exogenous variables (i.e., quarantine, self-isolation, social distancing and perceived online trust) and two endogenous variables (i.e., perceived stress, and OHISI) related through the five path relationships (H1 to H5), two moderator variables (i.e., perceived severity and perceived urgency) related through four path relationships (H6a to H6c and H7). All the five proposed direct effects and four moderating effect hypotheses are significant. Therefore, the validity of the research questions was met. The validity of RQ1 is met with the support of H1 to H3, RQ2 is met with the support of H4 to H5, and RQ3 is met with the support of H6a to H6c and H7. With the validity of RQ1, the research gap on the structural relationship between perceived stress and COVID-19 protocol is successfully filled. With the validity of RQ2, the research gap on the structural relationship between online trust and perceived stress with OHISI is successfully filled. With the validity of RQ3, the research gap on the moderation effect of perceived severity with COVID-19 protocols and perceived stress is successfully filled, and the research gap on moderation effect of perceived urgency with OHISI and perceived stress is successfully filled.

The public relies on online sources to obtain up-to-date health information, acquire accurate instructions, and restrict misinformation, either via official websites or telephone-based applications (Le *et al.*, 2020). When finding online information on COVID-19 preventive measures on the Internet, it is important to urge and facilitate the use of official public health organisations' websites. With such actions, the seeker will be able to obtain high-quality information more

regularly. Those websites will be able to enhance their usability and positioning, provided that the search engines justify the positioning of the links obtained in the search based on their frequency of access (Hernández-García and Giménez-Júlvez, 2020). Health information flows at the speed of life owing to the Internet, but OHI does not always provide a bright side. Thus, it can be concluded that there is a need for fact-checking.

Though data were collected from the athletes, the finding is not limited to only sports or health enthusiasts, but rather generalisable to the general public who faced stress due to COVID-19 protocol and search for health-related topics online. The findings indicate the three imperative outcomes. First, challenging times offer social bonding and other means of communicating with and supporting individuals a great opportunity. Of course, owing to COVID-19 protocol limitations, not being able to visit friends or relatives has increased alienation and feelings of loneliness in some instances. But the 'we are social together' feeling has also stimulated fascinating ways of communicating. This opportunity does come with a major caveat, as people go to protect themselves and their families by seeking the bright side of COVID-19 online health information. The promise of the bright side of OHI brings individuals together and has played out with virtual happy hours, meetings and events. The finding is consistent with (Sumaedi *et al.*, 2021) i.e., the perceived threat of COVID-19 had a substantial impact on information sharing behaviour (i.e., self-confidence, self-discipline, focus, resilience and optimism) of athletes during the COVID-19 pandemic.

Second, the public healthcare system is a critical component of India's healthcare delivery system, with services provided at the primary, secondary and tertiary levels (Verma *et al.*, 2022). At all three levels, challenges such as workforce shortage, infrastructure deficiencies, and access to high-quality healthcare services exist (Chandwani and Dwivedi, 2015). Therefore, owing to OHI, the combination of non-governmental organisations (NGOs), governments, and other volunteer involvement helped India to break the COVID-19 outbreak chain. The bright side of OHI reflects a social and technological benefit in India. For social benefit, individuals understand their fundamental duties towards society, the country person shows kindness and stand together with a person suffering from the COVID-19 disease and any individual going back home. When the fund was required to recover from the tragedy, the country's charity heroes helped the government and donated their earnings, Indian doctors, policemen, sweepers, NGO's and their volunteers worked hard to protect the individual from the spread and risked their lives to perform their duties. The finding is consistent with (Cato *et al.*, 2020) i.e., social distancing has a greater social benefit than a personal benefit. On the technological benefit, DRDO has developed an Ultraviolet disinfection tower to destroy COVID-19. Indian pharmaceutical industries are continuously trying to invent COVID-19 vaccines in collaboration with foreign companies. India scales up ventilator production to more than 50K in a year. The finding is consistent with (Acioli *et al.*, 2021) i.e., the mass production of ventilators, respirators, and facial protection is achievable using Industry 4.0 technology.

Third, amid COVID-19, the OHI chatbot offers bright personalised information to the individual seeker, which is more convenient and efficient to surpassing human capabilities. It can

provide valuable bright side facts like providing health-related information to personalised seekers, guidance for personalised seekers, personalised medication management and dosage, connecting people and organisations with first and specific responders, FAQ-type queries (details of the contact, directions, opening hours, and details of service/treatment), immediate access to personalised care, and personalised health monitoring. However, for the effective utilisation and wider adoption of such chatbot services, the chatbot industry leader, OHI policymakers, OHI practitioners and importantly the OHI seeker population go along with each other with an inbuilt fact-checker. The finding is consistent with (Behera *et al.*, 2021) i.e., A seamless experience for the athletes and the general public is created via the automatic responses through OHI chatbot to repetitious queries about COVID-19.

5.1. Theoretical implications

This study yields major theoretical contributions in multiple streams of literature. First, it contributes to the social science literature by linking quarantine, self-isolation and social distancing to OHI, wherein mathematical narration was presented to advance Deterministic Epidemic Theory, Protection Motivation Theory, Situational Awareness Theory, and Self-Determination Theory. Studies have investigated the effectiveness, such as the effectiveness of OHI for older patients (Bolle *et al.*, 2015), health information management courses and programs (Rouse, 2011), social media in disseminating health information (Sharma and Kaur, 2017) and entertainment education on health communication (Shen and Han, 2014). Our study is the first effort to present the effectiveness of the OHISI in quarantine, self-isolation and social distancing populations. Health information is traditionally provided to healthcare seekers by health practitioners and health educators in face-to-face communication and this has been proven successful. However, more flexible health information can be offered online and this method can complement the current face-to-face or screen-to-screen through video setting, resulting in effectiveness amid COVID-19 protocol.

Second, our study is the first effort to advance the online trust model with the introduction of a fact-checker for an Internet source to seek OHI. The fact-checker distinguishes between the bright sides vs. dark sides of Internet sources and moves the seeker to get closer to the truth. Studies have presented the fact-checker for political posts (Garrett and Poulsen, 2019; Amazeen, 2015) and we could not find the existence of such a fact-checker in seeking OHI amid COVID-19. Online information and questionable studies on vaccine development, emerging public health recommendations, and symptom monitoring multiply amid COVID-19 and fact-checkers address the seeker confusion, by expanding its landscape by debunking disinformation/misinformation, responding to queries about the pandemic, translating resources into local languages, and fostering scientific temper in the community.

Third, our study is the first effort to advance the online health information seeking intention model with the introduction of the OHISI map. Studies have presented the seeking intention of OHI by exploring the factors that influence consumer mobile health information seeking (Deng and Hinz, 2015), the tools and measures widely used to study the search for active health information (Anker *et al.*, 2011), to examine how the connection between doctor and patient in

social media affects the purpose of consumer health information to pursue and use (Wu *et al.*, 2018), to examine the relationship between the quest for health information and the desire to stop smoking and to decide whether health beliefs mediate this relationship (Upadhyay *et al.*, 2019). We could not find the existence of seeking OHI amid COVID-19. Seeking OHI increases seeker knowledge of COVID-19 and engagement in mental health decision-making strategies. In addition to mental health, OHI can contribute to the spiritual, emotional, physical, and financial health that is linked to physical well-being.

Finally, when returning search results for prominent falsehoods, Google prioritises fact-checking messages (Moren, 2015), and others have created browser plug-ins that warn seekers when viewing information suspected of being incorrect (Ennals *et al.*, 2010). In line with this, our study proposes a COVID-19 fact-checker that aims to identify and correct the error before dissemination of the bright side of OHI.

5.2. Managerial implications

From a managerial standpoint, the findings have significant implications and would be especially valuable for athletes, physicians and OHI seekers during COVID-19. First, with the (Chauhan *et al.*, 2022) telemedicine services, OHI can help physicians more effectively clarify complex health conditions to enhance outcomes and reduce the foot traffic of athletes or any OHI seeker in hospitals. On the contrary, physicians can be worried that athletes or patients have needless questions about their health, recognising that they also have irrelevant and unreliable OHI owing to the dark side. The difficulty in suggesting up-to-date and trustworthy OHI on the Internet can be one concern, where fact-checkers come in handy for OHI seekers. In addition, the satisfaction survey must be conducted on a regular basis to ensure that the telemedicine service is persistently improved (Lacerda *et al.*, 2021).

Second, due to COVID-19, athletes grappled with (Avanesian *et al.*, 2021) remote learning for their kids, unable to decide whether it's safe to send the kids to school. The concern of the elephant in the room can put women athletes at greater risk. When women athletes are trapped, under pressure, and do not have the resources to take care of their children, sometimes the frustration is inflicted on their children. The protection of such children is particularly important. The bright side of OHI helps to reduce women athletes' COVID-19 fears and, anxieties and supports their ability to deal with any side effects of their lives. The online health guidance offers key messages to school administrators, teachers, parents, and community members, children, in supporting secure virtual schools or online classes.

Third, for some time now, the dark side of OHI has been a big concern, and some individuals just read social media posts (Belcastro *et al.*, 2021) and assume it to be true, without consulting and considering an original or secondary source. The danger of the dark side of OHI has many faces, starting from losing trust to legal repercussions. Hence, fact-checking is incredibly important not only from the viewpoint of OHI on the Internet, but also while reporting on a COVID-19 news story. It is critical to have all the facts correct as a mistake could result in anything from losing trust to being the object of Internet backlash, no matter how small. However, with social media

growth and the willingness of the audience to reach their peers instantly, the art of spinning has to be on the bright side with the adoption of a fact-checker approach.

5.3. Limitations and future research directions

This study, like any other research, has limitations. First, a modest sample was considered for this research and was collected from athletes, the residents of India. Second, imposition of the COVID-19 protocol can result in other psychological ill-being, such as depression, anxiety, schizophrenia, eating disorders and addictive behaviours. Since stress is a prominent risk factor (Georgiou *et al.*, 2020), resulting from people's restrictions, our study has not considered other psychological ill-being due to the barriers to data collection. Third, the study did not consider other moderating variables such as gender, experience, body mass index (BMI), physical aggression and perceived health status due to data anomalies (Baabdullah *et al.*, 2019). Fourth, the study has not adopted a qualitative research method to further understand how, when, and why individuals seek OHI amid COVID-19.

We put forward the future research agenda while the proposed integrated theoretical framework is intended to be generalisable. The results would have been better if the data collections had been done with international athletes and also, from individuals/workers from industries such as automobile, marketing, clothing, hospitality, information technology, and education. Replacing perceived stress with the psychological ill-being with the additional inclusion of depressive symptoms, trait anxiety and trait anger and then, establishing the structural relationship between psychological ill-being and OHISI. Collection of data on gender, experience, physical condition, the practice of yoga, literacy skills, perceived health status, etc., to undermine the behavioural intention and additionally establish the moderator relationship with OHISI. To study the attitudes of individuals regarding seeking OHI and to record their OHISI with the adoption of a qualitative approach and to seek answers to the research questions like amid COVID-19: what is the general understanding of seeking OHI?, what are the advantages of seeking OHI?, what are the limitations of seeking OHI?, how is the OHI used?

6. Conclusion

The study proposed an integrated theoretical model to signify the connection of quarantine, self-isolation, social distancing and online trust with online health information seeking intention with perceived stress as mediating variable and perceived severity, and perceived urgency as moderating variables. A fact-checker model is proposed to distinguish between the bright or dark side of seeking OHI related to hospital beds, medicines like Remdesivir, vaccines like Covaxin, Covishield, Sputnik V etc., and oxygen, among others. The study reveals 'we are social together', social, cultural, technological, economic benefits and personalised OHI through the chatbot. 'We are social together' feeling has stimulated fascinating ways of communicating, and the promise of the bright side of OHI brings individuals together and has played out with virtual happy hours, meetings and events. Owing to OHI, the coordination of the government, and other volunteer involvement helped India to break the COVID-19 outbreak chain. OHI chatbot offers bright personalised information to the individual seeker, which is more convenient and efficient to surpass human capabilities, i.e., evaluates the authenticity of the information published on social

media and other online media that has received public attention in order to help avoid the spread of COVID-19 misinformation and promote trustworthy sources of information. Precisely, the research tries to examine the information systems, social science and healthcare literature by presenting fact-checkers as a technology benchmark to draw a line between the bright side and the dark side of OHI.

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Appendix A

Table AI: List of notations for assertions

Notations	Definition/Description
dt, dt^{-}	dt represents a date time at a specific instance and dt^{-} represents a different instance, wherein dt^{-} is greater than dt. The value of dt and dt^{-} is purely contextual and depends on the severity and urgency of the COVID-19 situation.
$N_Q(dt)$	Quarantine population with access to the Internet at an instance dt.
$N_{QS}(dt)$	Quarantine subpopulation with stress at an instance dt.
$N_{QO}(dt)$	Quarantine subpopulation accessing OHI at an instance dt.
$f_{QS}(dt)$, $f_{QS}(dt^{-})$	$f_{QS}(dt)$ is the fraction of quarantine subpopulation with stress at an instance dt and equates to $N_{QS}(dt) / N_Q(dt)$. The $f_{QS}(dt^{-})$ is for the another instance dt^{-}.
$f_{QO}(dt)$, $f_{QO}(dt^{-})$	$f_{QO}(dt)$ is the fraction of quarantine subpopulation accessing OHI at an instance dt and equates to $N_{QO}(dt) / N_Q(dt)$. The $f_{QO}(dt^{-})$ is for the another instance dt^{-}.
$OHISI_Q(dt^{-})$	OHISI of quarantine subpopulation at an instance dt^{-}.
$OHISI_{SI}(dt^{-})$	OHISI of the self-isolation subpopulation at an instance dt^{-}.
$f_{SIS}(dt^{-})$, $f_{SIS}(dt)$	Fraction of self-isolation subpopulation with stress upon self-isolation population at the instance dt^{-} and dt respectively.
$f_{SIO}(dt^{-})$, $f_{SIO}(dt)$	Fraction of self-isolation subpopulation accessing OHI upon self-isolation population with access to Internet at the instance dt^{-} and dt respectively.
$OHISI_{SD}(dt^{-})$	OHISI of the social distancing subpopulation at an instance dt^{-}.
$f_{SDS}(dt^{-})$, $f_{SDS}(dt)$	Fraction of social distancing subpopulation with stress upon the social distancing population at the instance dt^{-} and dt respectively.
$f_{SDO}(dt^{-})$, $f_{SDO}(dt)$	Fraction of social distancing subpopulation accessing OHI upon social distancing population at the instance dt^{-} and dt respectively.
$\propto$	Direct proportional.
$\propto 1$	Inverse proportional.
s	Health information source over Internet.
FCI(s)	Fact-checker indicator of s to seek OHI.
CR(s)	Credibility of s. It refers to who sponsors/hosts the source (e.g., government agency, a professional medical non-profit organization, the pharmaceutical company, or hospitals).
R(s)	Reliability of s. It refers to who wrote the information, who reviewed it, when the information is written (e.g., most recent, recent, or out-of-date).
I(s)	Intimacy of s. It refers to privacy (e.g., is the source protecting personal information on mental health for an individual).
G(s)	Goodwill of s. It refers to an Internet source driving goodwill values (e.g., does the site offer quick, uncomplicated, or manageable solutions to the health tribulations).
CO(s)	Context of s to COVID-19 circumstances. It refers to OHI in the context of COVID-19 e.g., contact tracing in COVID-19.
^	Logical AND.
CF	Contextual fields such as "attacks on healthcare" amid COVID-19, contact tracing, etc.
N	Total number of contextual fields.
Q	Total number of attributes of a contextual field.
CD	Contextual dimensions e.g., "attacks on healthcare" is the contextual field and its dimensions are physical assault, eviction from home, psychological threat, etc.
FCI(s)	Fact-checker indicator of OHI site s. It produces 2 values i.e., FCI(s) = 1 signifies that the Internet source is definitely to provide the bright side of OHI and FCI(s) = 0 signifies that the Internet source may provide the bright side, but mostly provide the dark side of OHI.

Assertion 1: A value of zero for $f_{QS}(dt)$ symbolises that no one in the quarantine subpopulation is experiencing stress and a value of one symbolises that the quarantine subpopulation is dealing with stress. A value of zero for $f_{QO}(dt)$ symbolises that no one in the quarantine subpopulation is accessing OHI and a value of one symbolises that the quarantine subpopulation is accessing OHI. In principle, $N_{QS}(t) \subseteq N_Q(t)$, $N_{QI}(t) \subseteq N_Q(t)$ and one of the possibilities of $N_{QI}(t) \subseteq N_{QS}(t)$ or $N_{QI}(t) \subset N_{QS}(t)$ or $N_{QI}(t) \not\subset N_{QS}(t)$. $OHISI_Q(dt^{-})$ is effective when (i) $f_{QO}(dt^{-}) \geq f_{QO}(dt)$ and $f_{QS}(dt^{-})$

$<f_{QS}(dt)$ i.e., with the flow of time, increase in seeking of OHI should result into reduction of stress for quarantine subpopulation or (ii) $f_{QO}(dt^{-})$ is one and $f_{QS}(dt^{-})$ is zero i.e., with the flow of time, seeking of OHI is at peek and stress is stared for quarantine subpopulation.

Assertion 2: In a similar line to quarantine situation, $OHISI_{SI}(dt^{-})$ is effective when (i) $f_{SIO}(dt^{-}) \geq f_{SIO}(dt)$ and $f_{SIS}(dt^{-}) < f_{SIS}(dt)$ i.e., with the flow of time, increase in seeking of OHI should result in a reduction of stress for self-isolation subpopulation, or (ii) $f_{SIO}(dt^{-})$ is one and $f_{SIS}(dt^{-})$ is zero i.e., with the flow of time, seeking of OHI is at peek and stress is stared for self-isolation subpopulation.

Assertion 3: In a similar line to the quarantine situation, $OHISI_{SD}(dt^{-})$ is effective when (i) $f_{SDO}(dt^{-}) \geq f_{SDO}(dt)$ and $f_{SDS}(dt^{-}) < f_{SDS}(dt)$ i.e., with the flow of time, increase in seeking of OHI should result into reduction of stress for social distancing population, or (ii) $f_{SDO}(dt^{-})$ is one and $f_{SDS}(dt^{-})$ is zero i.e., with the flow of time, seeking of OHI is at peek and stress is stared for social distancing population.

Assertion 4: In reference to the corollaries for quarantine, self-isolation, and social distancing, we postulate, $f_{QO}(dt^{-}) \propto f_{QS}(dt^{-})$, $f_{SIO}(dt^{-}) \propto f_{SIS}(dt^{-})$, and $f_{SDO}(dt^{-}) \propto f_{SDS}(dt^{-})$ for the dark side of seeking OHI, and $f_{QO}(dt^{-}) \propto 1\ f_{QS}(dt^{-})$, $f_{SIO}(dt^{-}) \propto 1\ f_{SIS}(dt^{-})$, and $f_{SDO}(dt^{-}) \propto 1\ f_{SDS}(dt^{-})$ for the bright side of seeking OHI.

Assertion 5: Nowadays, in the area of healthcare management, growing attention is paid to the dark side of social media, and researchers are motivated to investigate the effects (Smaldone *et al.*, 2020). There are thousands of sources for seeking OHI. Reliable information is provided by some sources, and the rest is not. Part of the information on the Internet is recent, and the rest is not. Amid COVID-19, a significant step in seeking accurate and reliable OHI is to select trustworthy sources by interlocking a fact checking process that analyses and rates such sources that provide the bright side of OHI. Therefore we define, $FCI(s) = CR(s) \wedge R(s) \wedge I(s) \wedge G(s) \wedge CO(s)$ and context as a collection of contextual fields i.e., $CO = \{CF_1, CF_2, ...CF_n\}$, wherein $1 \leq i \leq n$. Each contextual field, i.e., CF is associated with a set of contextual dimensions CD, where each contextual dimension is defined as $CF_i = \{CD_1, CD_2, \ldots, CD_q\}$. The FCI is presented in Equation 1.

$$FCI(s)\begin{cases} = 1 \text{ when CR(s) and R(s) and I(s) and G(s) and CO(s) are true} \\ = 0 \text{ when CR(s) or R(s) or I(s) or G(s) or CO(s) are false} \end{cases} \quad (1)$$

A fact-checker system is to verify the factual information to promote the correctness and veracity of COVID-19 related OHI. Since fighting misinformation/disinformation is an ever-evolving problem, the bright side of OHI (i.e., FCI(s)=1) is realisable with a fact-checker system. Therefore, we propose a COVID-19 fact-checker system based on (Ploesser and Dreiling, 2017).

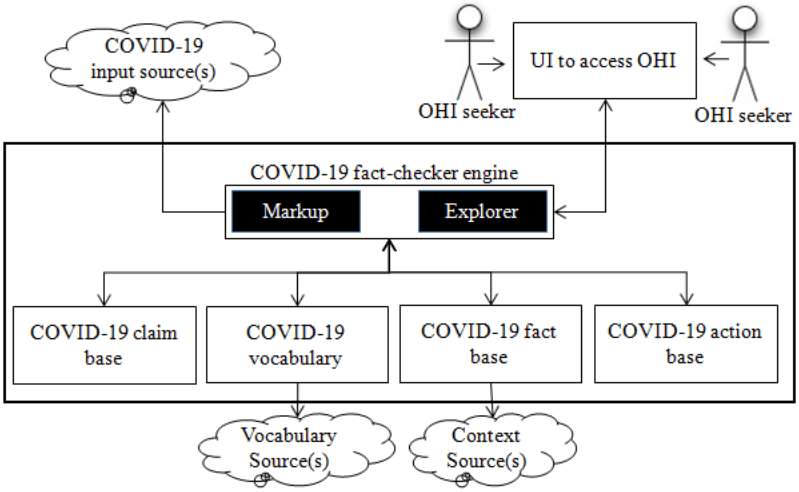

Figure A1: COVID-19 fact-checker system

The system is presented in Figure A1, depicting different components and the interactions among the components. Different components of the proposed fact-checker system are presented in Table AII.

Table AII: Fact-checker system components

Component	Description
COVID-19 fact-checker engine	It is the brain behind the fact-checking process to classify and verify whether the COVID-19 OHI source is providing a bright or dark side. It has two internal components, namely the fact-checker markup and fact-checker explorer. The markup searches through the Internet in adopting search listening, social listening, electronic word of mouth of health information seeker, physician conversation data, COVID-19 contextual and COVID-19 vocabulary data to build a corpus of available COVID-19 OHI sources and classify each source as bright or dark. A corpus is a machine-readable representation of the complete record of a COVID-19 and includes topic such as credibility, reliability, intimacy, goodwill, and context. The explorer listens to the OHI seeker through the user interface (UI), verifies, and responds to whether the COVID-19 OHI source provides a bright or dark side. Brin and Page (1998) build PageRank to specify a priority for Internet sources when a search is made. PageRank's initial intent is to define relationships between Internet sources which can be reused as input, vocabulary, contextual, search listening, social listening, electronic word of mouth and physician conversation Internet sources. The damping factor d is set to 0.85 as a standard value in the PageRank algorithm of Brin and Page for Internet sources that is described by the observation that a search engine user will follow the order of six hyperlinks before the user gets bored with the search result and begins a new search (Chen *et al.*, 2007). PageRank is determined by successively applying an iterative algorithm until the execution of a fixed number of iterations (Martinez et al. 2014). The damping factor is typically in the range of 0.85 to 0.95 (Haveliwala 2003). Martinez *et al.* (2014) used a damping value of 0.95 and 30 iterations for improving the search for electronic health records, and the overall result suggests a robust task of patient cohort retrieval, and hence we recommend the same value for building the COVID-19 fact-checker markup internal component.
COVID-19 claim base	Once the corpus record is created for the COVID-19 OHI source, the subject matter expert (SME) approves the source for correctness and veracity in a manual or automated fashion. The approved corpus records constitute the COVID-19 claim base.
COVID-19 vocabulary	It searches through the Internet to confirm the COVID-19 vocabulary in determining the goodwill of an OHI source.
COVID-19 fact base	It searches through the Internet to confirm COVID-19 contextual information to determine its contextual field, the contextual dimension of an OHI source.

COVID-19 action base	Due to known or unknown reasons, if the fact-checker system is unable to classify an OHI source, sourced by the seeker using the UI, such source is stored in the action base. The action base sends a signal to the markup component for action. The markup performs the possible corrective action to classify it and add it to the claim base.

Appendix B

Five-point Likert scale questions (1: Totally disagree to 5: Totally agree) are captured in Table BI and were asked to athletes. The objective is to observe the online health information seeking intentions of athletes.

Table BI: Measurement items

Constructs	Items	Scale Item	Source
Amid COVID-19, due to quarantine:			
Quarantine (QU)	QU1	I have repeated, disturbing and unwanted thoughts related to a stressful experience.	Forte *et al.*, 2020
	QU2	I have repeated and disturbing dreams related to a stressful experience.	
	QU3	I feel very upset.	
	QU4	I have strong physical reactions thinking about this stressful experience.	
Amid COVID-19, due to self-isolation:			
Self-isolation (SI)	SI1	I have strong negative beliefs about myself, others, or the world.	Forte *et al.*, 2020
	SI2	I have irritable behavior, outbursts of anger, or aggressive actions.	
	SI3	I feel nervous or easily frightened.	
	SI4	I have disturbed sleep.	
Amid COVID-19, due to social distancing:			
Social Distancing (SD)	SD1	I have difficulty falling asleep.	Forte *et al.*, 2020
	SD2	I am having difficulty with positive feelings.	
	SD3	I have difficulty thinking about aspects other than this stressful situation.	
	SD4	I have strong negative feelings like fear, horror, anger, guilt, or shame.	
Amid COVID-19, due to quarantine and/or self-isolation and/or social distancing:			
Perceived stress (PST)	PST1	I have trouble sleeping because I am worried about COVID-19.	Taylor *et al.*, 2020b
	PST2	I have bad dreams about COVID-19.	
	PST3	I think about COVID-19 when I do not mean to.	
	PST4	I have disturbing mental images about COVID-19 that popped into my mind against my will.	
	PST5	I have trouble concentrating because I kept thinking about COVID-19.	
Amid COVID-19 pandemic:			
Perceived severity (PSE)	PSE1	COVID-19's negative impact is very high.	Farooq *et al.*, 2020
	PSE2	COVID-19 can be potentially life-threatening.	
	PSE3	For someone like me, COVID-19 is a serious threat.	
Amid COVID-19, the trustworthiness of the online health information:			
Perceived online trust (POT)	POT1	I believe the health websites or social networking health portals are trustworthy.	Corritore *et al.*, 2005
	POT2	I believe health websites or social networking health portals will not act in a way that harms me.	
	POT3	I believe health websites or social networking health portals will not take advantage of me.	
Amid COVID-19, the intention of seeking online health information			
Online health information	OHISI1	I look for social media posts concerning COVID-19.	Taylor et al., 2020b
	OHISI2	I look for YouTube videos about COVID-19.	

seeking intention (OHISI)	OHISI3	I searched the Internet for a treatment option for COVID-19.	
Amid COVID-19, urgency on seeking online health information:			
Perceived urgency (PU)	PU1	I prefer to search for online health information when I experience health issues.	Xia *et al.*, 2017
	PU2	Most of the health issues I am searching for on the Internet are pressing.	
	PU3	The majority of health issues I am searching for on the Internet need to be fixed immediately.	

The measurement items for the OHISI dimensions are captured in Table BII and were asked to athletes and the objective is to observe frequency of search, diversity of search and reference of search.

Table BII: Measurement items for OHISI dimension

Dimension	Measurement Items	Source
	Amid COVID-19 pandemic, In COVID-19 pandemic, while seeking online health information:	
Frequency of search	The last time you used the Internet to seek details about medical care or health (1) within the last week, (2) within the last month, (3) within the last few months, and (4)over a quarter ago, or (5) never	Xiao *et al.*, 2014
	Have you explicitly searched for online details about COVID-19? (Yes/No)	
	How much have you used the internet in the past few months to search for advice or information about COVID-19? (1) About once a week, (2) Once a month, (3) Every few months, or (4) less often	
Diversity of search	Have you done the following things while using the Internet in the past few months? (1) Bought medicine or vitamins online (2) Participated in an online support group for people with similar health or medical issues. (3) Looked for health or medical information. (4) Healthy lifestyle advice. (5) Prevention tips (6) Do anything else health-related on the Internet.	
Reference of search	Imagine that there was a great need for you to get COVID-19 information, where do you go first? (1) world health organization (2) .gov that identifies a government agency (3) .edu that identifies an educational institution (4) .org that usually identifies non-profit organizations (such as professional groups; scientific, medical, or research societies; advocacy groups) (5) .com identifies commercial websites (such as businesses, social media, pharmaceutical companies, and sometimes hospitals) (6) dedicated COVID-19 hospitals telephone information number.	