

RESEARCH

Open Access



# Identification of emerging harms due to COVID-19 outbreak: a qualitative study in Iran

Sina Ahmadi<sup>1</sup> , Seyed Fahim Irandoost<sup>2\*</sup> , Neda SoleimanvandiAzar<sup>3\*</sup> , Marzieh Nojomi<sup>3,4</sup> , Javad Yoosefi Lebni<sup>5</sup> and Arash Tehrani-Banihashemi<sup>3</sup>

## Abstract

**Introduction** Although COVID-19 has altered various harms and exacerbated the prevalence of some of them, this period has also set the stage for the emergence of new harms. The present study aims to identify the emerging harms resulting from the COVID-19 outbreak in Iran.

**Methods** The study was conducted using a qualitative content analysis approach through semi-structured interviews with 21 experts and professors knowledgeable about social harms and COVID-19 consequences who were selected through purposive and theoretical sampling. Data analysis was carried out using the Graneheim and Lundman's method in MAXQDA-2018 software. Guba and Lincoln's criteria were used to trustworthiness of results.

**Results** The results showed that the COVID-19 pandemic led to a range of issues and problems at various levels of society that were not considered social harms before the pandemic, given their prevalence and impact. After analyzing the data, four main categories and fourteen subcategories were identified. The main categories were social fatigue, ineffective education system, formation of a digital lifestyle, and formation of a new understanding and meaning of death and life.

**Conclusion** The COVID-19 crisis has intensified existing social harms and introduced new ones, rendering previous mitigation strategies ineffective. Designing novel policies and guidelines is crucial to address these evolving challenges and reduce the adverse societal impacts of the pandemic.

**Keywords** COVID-19, Emerging harms, Qualitative study, Iran

\*Correspondence:

Seyed Fahim Irandoost  
Irandoost.SF@umsu.ac.ir

Neda SoleimanvandiAzar

Soleimanvandi.n@iums.ac.ir; nedasoleiman@yahoo.com

<sup>1</sup>Social Development and Health Promotion Research Center, Health Institute, Kermanshah University of Medical Sciences, Kermanshah, Iran

<sup>2</sup>Department of Community Medicine, School of Medicine, Urmia University of Medical Sciences, Urmia, Iran

<sup>3</sup>Preventive Medicine and Public Health Research Center, Psychosocial Health Research Institute, Department of Community and Family Medicine, School of Medicine, Iran University of Medical Sciences, Tehran, Iran., Shahid Hemmat Highway, Tehran P.O. Box: 14665-354, 1449614535, Iran

<sup>4</sup>Department of Sociology and Anthropology, Nipissing University, North Bay, ON, Canada

<sup>5</sup>Social Determinants of Health Research Center, Lorestan University of Medical Sciences, Khorramabad, Iran



© The Author(s) 2025. **Open Access** This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

## Introduction

Despite significant advances in combating diseases, infectious diseases still hold considerable importance in various aspects of public health [1, 2]. COVID-19, an acute respiratory disease from the coronavirus family, emerged in December 2019 in Wuhan, China [3, 4]. The emergence of COVID-19 as a novel disease has posed a serious challenge to public health systems worldwide [5, 6]. Since the onset of the disease, 224 countries have been affected. As of April 13, 2024, the total number of COVID-19 cases has exceeded 704 million, with over 7 million deaths. The United States, with 1,200,000 deaths, has recorded the highest mortality rate due to COVID-19. Iran, with over 7 million cases and more than 145,000 deaths, has also been significantly affected by COVID-19 [7].

This contagious disease not only threatens the physical health of individuals and, in some cases, leads to death, but it also causes unsupportable psychological stress for affected communities, as pandemics often create uncertainty and confusion among people [8]. This disease has changed people's living conditions, causing many people in various countries to remain at home in quarantine [9]. During the COVID-19 pandemic, people have experienced intense negative emotions due to the closure of schools and businesses. Furthermore, many aspects of individuals' lives have been affected, with the most significant impact being social interactions [9, 10]. Human sociability has been diminished, and people have become more self-centered. One of the cultural and social consequences of the virus has been an increase in the volume and diversity of social harms. Naturally, with family members experiencing unemployment, quarantine, and the closure of schools and universities, they spend extended hours together at home. The lack of communication skills has led to numerous challenges and increased family conflicts, which paved the way for many social harms. During this period, people have become more self-centered instead of being community-oriented, which is itself a form of harm. If this period extends and individuals spend more time alone, it can lead to other issues such as depression, isolation, and excessive use of virtual space [11]. In addition to the immediate and apparent effects on life and human health that typically receive the most attention during pandemics, there are also chronic and long-term impacts that require careful examination.

Various studies and estimates indicate that specific harms have increased during the COVID-19 pandemic: domestic violence, higher mortality rates, increased anxiety and fear, obesity, drug and alcohol abuse, and the consumption of pornographic films [12]. Although various harms have evolved, and some have become more prevalent during the COVID-19 period, this time has also set

the stage for the emergence of new harms. Emerging harms refer to those specific to contemporary society and did not exist previously [13]. These include harms related to virtual spaces, the internet, satellite television, and new communication technologies, which alter human relationships and behaviors [14]. Emerging harms are problems and challenges that involve a large part of the studied society and have had significant effects on individuals and, consequently, society. These harms include a set of issues that reflect the profound changes caused by the challenge of the COVID-19 pandemic and were not common in society in this way before the spread of COVID-19. These harms resulting from the COVID-19 pandemic manifest across various social [12, 15], health [12], economic [16, 17], psychological [18, 19] levels and more.

Rasul et al. (2021) demonstrated in a study that South Asian countries imposed strict lockdowns to control the virus spread, significantly affecting the lives and livelihoods of millions in this region, home to one-third of the world's poor. They reported that COVID-19 is likely to impact economic growth, increase fiscal deficits and financial burdens, heighten macroeconomic instability risks, reduce migration, travel, and tourism revenues, and stifle the growth of small and medium enterprises, thereby deepening poverty, unemployment, and the risks of hunger and food insecurity. Consequently, it may exacerbate existing inequalities, disrupt social cohesion, and increase tension and turmoil [15]. Poudel et al. (2021) also found that health-related issues during the COVID-19 period included increased mortality, health concerns, healthcare system challenges, and fitness problems. Some of the psychosocial issues that stemmed from despair were due to disruptions in life and expressions of fear, while social issues included harassment, domestic violence, and negative social attitudes [20].

Emerging risks carry significant importance. The complexity and gravity of the outcomes from overlooking a comprehensive assessment of the challenges, concerns, and various new and emerging harms resulting from COVID-19 are substantial. These can impede the swift and effective return of individuals and communities to normalcy, leading to diverse long-term impacts. Therefore, it is imperative to investigate and identify these harms thoroughly. In other words, a review of the literature related to the impacts of COVID-19 has shown that the focus of studies and literature in this area has primarily been on identifying the harms and consequences of COVID-19. Research has paid less attention to identifying harms that were not previously recognized as issues before COVID-19 but have since been acknowledged as significant concerns in the aftermath of the pandemic. Therefore, the present study aims to identify emerging harms in the context of changes brought about by

COVID-19. The main research question is: What new harms have emerged as a result of COVID-19?

## Methods

### Design

This study employed a qualitative approach using conventional content analysis. In qualitative research, emphasis is placed on understanding the complexities and details of the phenomena under study, with the researcher being actively engaged in the research process. Content analysis directly extracts themes from textual data, enabling the researcher to gain a deeper understanding of a phenomenon [21].

### Participants

The participants in this research were specialists and university professors who are experts in the field of social and health problems. The inclusion criteria included authorship or research in the fields related to harms and COVID-19 and willingness to participate in the study. The exclusion criterion was the interruption of the interview process or failure to complete the answering of interview questions.

### Data collection

Purposive and theoretical sampling methods were employed to obtain samples. Purposive sampling was used to select interviewees, while theoretical sampling was utilized to determine the number of individuals, identify necessary data locations, and chart the research path. This sampling approach ensures that the diverse information facilitates better examination and analysis of various aspects and dimensions of the phenomenon under study [21]. Based on this, the research team first identified experts. After compiling a list of these individuals, prioritization was conducted considering their knowledge and experience. Then samples were selected based on study inclusion criteria. In the description of the sampling method, it should be noted that in order to achieve maximum diversity in the data, efforts were made to select participants from specialists with various expertise related to the subject under study. The research team searched reputable scientific databases such as PubMed, Web of Science, Scopus, and the Google Scholar search engine, identifying a list of faculty members and experts who had conducted research in the field of harm and issues related to social changes and pandemics, especially Covid-19. Subsequently, participants were contacted via email or phone to invite them to participate in the research and to arrange the time and place for it. Based on theoretical sampling methods, after each interview and data analysis, based on the codes that were formed, we went to the individuals who had the most knowledge and experience regarding the codes that emerged, as they

could assist us more than anyone else in understanding and gaining deeper insights into those codes.

The data collection method involved semi-structured face-to-face interviews. However, in 8 cases, interviews were conducted online. The interviews were conducted by the first author and the article's lead author, with ten conducted face-to-face and eight via telephone and online. Ethical approval was granted by the Iran University of Medical Sciences, and the researchers held a session to design the interview questions. After designing the questions, it was decided to conduct two pilot interviews to determine if the questions would achieve the objectives. In fact, a pilot interview was conducted with two specialists, who were later excluded from the samples and research process in the main interviews. The purpose of these pilot interviews was to identify any flaws in the interview guide questions. After completing the pilot interviews, all the article's authors met again to review and revise the interview questions, ultimately finalizing the interview guide (Table 1). To ensure the quality and accuracy of the questions, we also consulted three researchers in the fields of qualitative research and social issues. During each interview, the researcher would first introduce themselves, explain the study's goals and procedures to the participants, and according to COPE ethics, obtain written informed consent before starting the interviews. Initially, demographic questions were asked, followed by the main questions (Table 1). The sequence of interview questions was not uniform for all participants because the next question was asked based on the responses given. However, in general, the interview guide questions were asked of all participants. In fact, the codes that were raised in each interview were asked as questions in subsequent interviews to achieve a richer understanding, and the codes were continuously reviewed to determine whether other individuals had similar experiences. In this regard, efforts were made to maintain a level of consistency in the interviews while exploring the participants' deeper perspectives through follow-up side questions. Alongside the questions outlined in the interview guide, additional exploratory questions were asked based on participants' responses. All interviews were recorded with participants' permission, and note-taking was also conducted during interviews where necessary. During the interviews, a comfortable and friendly atmosphere was created for the participants so that they could speak freely. The interviewer kept the principle of active listening in mind, carefully listening to the participants' responses and making an effort to better understand their opinions. The interviews were conducted with the presence of the researcher and the participant, without the presence of any other individuals. The duration of interviews varied from 30 to 68 min, depending on the information provided by participants. All interviews took

**Table 1** Guide to interview questions

No.	Questions
1	Overall, what impact has the COVID-19 pandemic had on social problems and harms (such as poverty, inequality, corruption, domestic violence, social isolation, increased anxiety, alcohol consumption, online presence, etc.)? Please explain the most significant of these harms and the increase or decrease in their prevalence.
2	Has the COVID-19 pandemic also caused the emergence of new social harms, in addition to existing ones? In other words, are we facing newly emerging harms because of this pandemic? Please explain.
3	What family-level harms has the COVID-19 pandemic caused?
4	What societal-level harms has the COVID-19 pandemic caused?
5	Do you believe these newly emerged harms can be controlled and prevented? What strategies do you suggest for addressing and reducing their impacts?

place in university settings or participants' workplaces without the presence of others. Data collection began on 10 May 2022 and concluded within 90 days.

The sample size was determined based on theoretical saturation criteria. Once we concluded that additional interviews were not providing new information but rather repeating previous data, data collection was halted. However, codes were repeated in the 18th interview, but researchers continued interviews with up to 21 participants for further assurance and prevention of false saturation.

### Data analysis

Data analysis was conducted using the 5-step Graneheim & Lundman method [22], aided by MAXQDA-2018 software. The data analysis process was shared with all research team members, and after summarizing their opinions, categories and sub-categories were named. In fact, although three members of the research team directly conducted the data analysis, all team members were kept informed about it and provided feedback, and wherever necessary, corrections were made based on their opinions. In the first stage, after conducting interviews, the researcher and another colleague immediately transcribed them. In the second stage, two research team members reviewed the transcribed interviews multiple times to achieve an overall understanding of the text. In the third stage, the interviews were meticulously reviewed line-by-line and word-by-word to identify initial codes. In the fourth stage, researchers categorized similar codes under one category and determined their relationships. Finally, in the last stage, the categories formed in the previous stage were placed in broader and more abstract categories, resulting in the emergence of themes. In the data analysis process, three members of the research team (including the first author, third author, and corresponding author) collaborated. After the final analysis, the entire process was explained in a session for all authors of the paper, and minor changes were made to the names of categories and subcategories in some cases.

### Trustworthiness

To enhance the validity and quality of the results, we adhered to Guba and Lincoln's four-dimension criteria [23]. Additionally, we followed the 32-item checklist for qualitative research reports by Tong et al. (2007) [24]. We prioritized participant involvement to establish credibility. Findings were shared with participants, and their approval was obtained for the creation of categories and subcategories. This means that the results and classifications obtained were presented to the participants, and they were asked whether these findings aligned with their intended meanings. The researchers also selected participants with the most diverse demographic characteristics.

For this purpose, experts and specialists from various fields related to the harms and issues associated with COVID-19, as well as other experts such as teachers, faculty members, police, psychiatrists, etc., were selected. Three independent qualitative research experts reviewed and validated the coding, categorization, and reporting of results to ensure confirmability. In other words, three specialists who had experience in qualitative research and were skilled in this field, reviewed the results and provided suggestions for improving the categorization and presentation of the findings. To increase Dependability, all authors sufficiently supervised the research process, held online meetings every two weeks to discuss the findings and the coding process. To enhance the Transferability of the research, we provided a detailed description of all research stages, included many direct quotes from participants, and had the research results confirmed by individuals who had similar conditions to the participants but were not involved in the study.

#### Ethical considerations

The study was approved by the Research Ethics Committee of the Iran University of Medical Sciences, Tehran, Iran (IR.IUMS.REC.1400.1194). To adhere to ethical principles in the research, we obtained informed consent from all participants. In other words, all participants expressed their consent to participate in the study. For in-person interviews, informed written consent was obtained, while verbal consent was acquired for online interviews. Ethical codes were sent to the participants and confirmed by them. Throughout the interviews, all ethical codes were adhered to. We assured them that their information would only be used for research purposes and that their names would remain confidential. Participants were also informed that their participation

was entirely voluntary and they could leave the interview session anytime.

#### Results

Twenty-one participants participated in this study, and their demographic characteristics are listed in Table 2. After data analysis, we identified four main categories and 14 subcategories (Table 3; Fig. 1).

#### Social fatigue

One of the emerging issues exacerbated by COVID-19 was social boredom. This feeling of ennui and dissatisfaction spread widely throughout society, altering patterns of interaction, mourning, and even the meaning of life.

#### Social isolation

A key aspect of social boredom was the social isolation and withdrawal experienced by people. In this state of social isolation, interactions were minimized, and individuals voluntarily reduced their connections, avoiding face-to-face encounters. During this process, common social relationships became fragile, and people became emotionally isolated and disconnected.

*The man (P1) mentioned that: “The first thing people went through was quarantine. When you’re quarantined, a few things happen. Take the family unit, for example: all external communications get cut off. For some, even interactions with close relatives were cut off for months. So, you see an isolated family”.*

*The woman (P9) mentioned that: “COVID-19 sped things up and acted as a catalyst; it made Iranian society more modern. People were already trying to cut down on their interactions, and COVID-19 came along and helped with that. This reduction in interactions became a new normal”.*

*The man (P3) mentioned that: “Social isolation happened; suddenly, many regular supportive relationships between families were cut off. Interactions with lonely people, where someone would visit them, stopped, and actually, emotional connections were also disrupted”.*

#### Changing patterns of social interaction

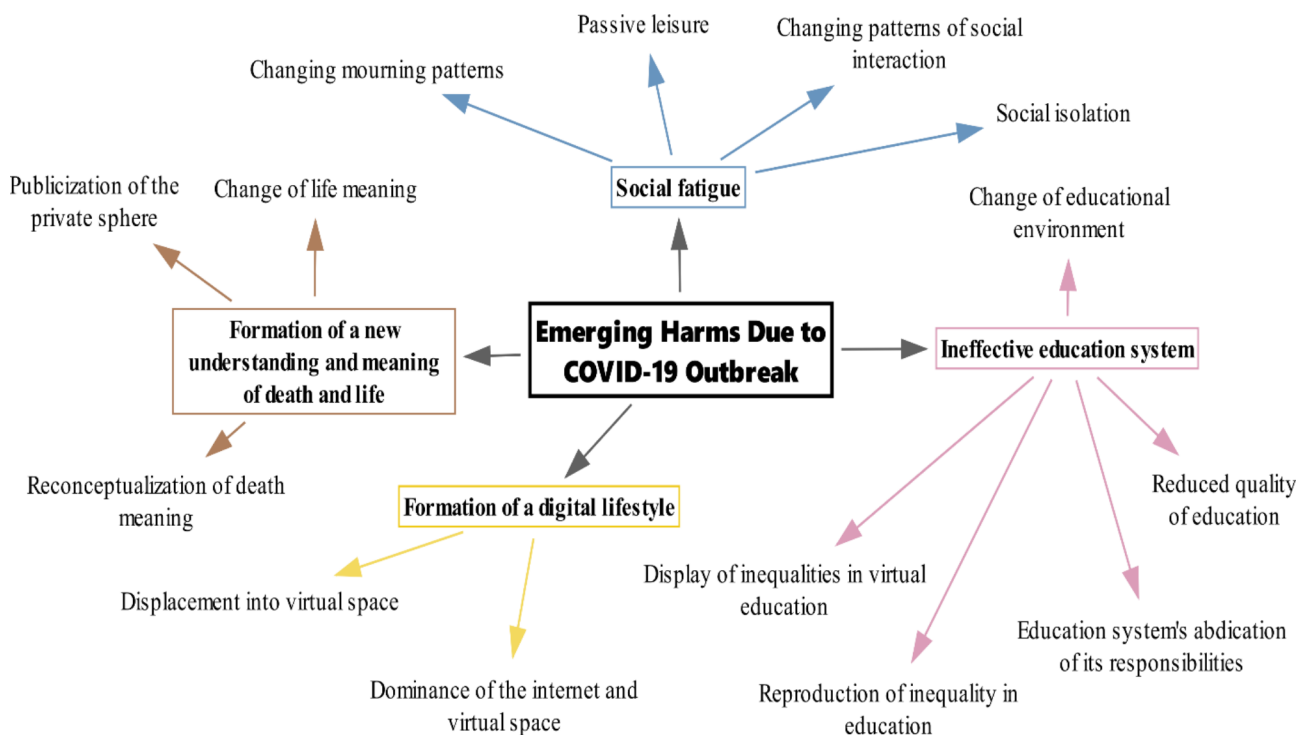
Alongside the isolation of society and the reduction in interactions, the real and customary patterns of people’s interactions with one another also underwent changes. Handshakes and hugs were considered dangerous, and social gatherings were minimized. Even traditional ceremonies such as weddings were held in new and different ways, with people showing little desire to participate in these events.

**Table 2** Demographic characteristics of study participants

	Participants’ Characteristics
Age	31–41: 7
	42–52: 7
	53–63: 7
Gender	Male: 13
	Female: 8
Education level	PhD: 18
	Master’s degree: 3
Specialized field	Sociology: 3
	Public health: 4
	Psychiatry & Psychology: 4
	Epidemiology: 2
	Biology: 2
	Economics: 1
	Gerontology: 1
Nursing: 1	
Community Medicine: 1	
Education: 1	
Healthcare science: 1	

**Table 3** Categories, subcategories, and codes derived from interviews with experts

Main categories	Subcategories	Codes
Social fatigue	Social isolation	Disruption of social interactions and communications, reduction in people's voluntary interactions, shrinking social circles and increasing isolation of people, avoidance of face-to-face encounters, fragility of social relationships, separation from their significant others, emotional isolation
	Changing patterns of social interaction	No handshakes or hugs, fewer and different types of gatherings and visits, disconnection of kinship ties, changes in the way weddings are conducted, reduced social participation in events
Ineffective education system	Changing mourning patterns	Delegating social events to virtual space, closing mosques and holding mourning ceremonies at home, sending condolences via virtual space and messages, people's fear of attending mourning ceremonies, grieving loved ones in solitude and isolation
	Passive leisure	Rise of passive leisure, reduced physical activity, decreased physical activities among children, boredom, web surfing
	Reduced quality of education	Lack of proper education, indirect teaching, disruption in education at all levels, minimal learning among students, recommendation to give grades in virtual space, parents completing assignments and exams for students, academic decline due to lack of access to virtual education, dropout and discontinuation of education
	Change of educational environment	Shifting the responsibility of education to virtual space, home-based learning instead of school, lack of familiarity with school norms and culture (first grade), lack of experience in educational environments and interaction with classmates, changes in student relationships with each other and teachers, lack of socialization and understanding of university relations, absence of diverse human interactions
Formation of a digital lifestyle	Reproduction of inequality in education	Inequality in virtual education, lack of access to the internet and virtual learning tools for the underprivileged and the poor, deprivation and harm to disadvantaged groups from virtual education, inability to afford smartphones, children of the underprivileged working instead of attending virtual classes, delay in returning to education due to child labor, no assistance for those without virtual learning resources
	Education system's abdication of its responsibilities	Delegation of education responsibilities to teachers and parents, abandonment of personnel involved in education and training, imposing educational burdens on parents, especially mothers
Formation of a digital lifestyle	Display of inequalities in virtual education	Display of family resource disparities in educational videos, understanding of inequality by more deprived students, perception of inequality at a young age, earlier awareness of inequality among children
	Dominance of the internet and virtual space	Unchecked expansion of digital life, shutting down real-world spaces and promoting virtual space, increased influence of digital technologies, expansion of digital activities, proliferation of remote virtual interactions, inability to use virtual space within normal limits, excessive imposition and penetration of virtual space into people's lives beyond actual needs
Formation of a new understanding and meaning of death and life	Displacement into virtual space	Students being thrust into unsafe virtual spaces, access to mobile phones and the internet in childhood, exposure to inappropriate content, children's curiosity in virtual spaces against family restrictions and values, elimination of family restrictions with the purchase of phones and tablets, the harmful impact of exploring virtual space on children's thoughts and relationships
	Reconceptualization of death meaning	Collapse of the concept of death, witnessing multiple deaths and their normalization, constant reminder of life's fragility and impermanence, changing mindset towards death and immortality, altering interpretations and perceptions of death
	Change of life meaning	Intensification of extreme individualism, reinforcement of rationality, change of human beings' meaning and nature, promotion of hedonism in virtual spaces, pleasure as the focal point of life
Formation of a new understanding and meaning of death and life	Publicization of the private sphere	Increased display of personal life, normalization of showing the private sphere, comparison of real life with fake displays, the negative impact of fake luxury displays on real life, intensifying human differences through display and comparison.



**Fig. 1** Emerging harms due to COVID-19 outbreak

The man (P8) mentioned that: “Many Iranian family events and traditions, like visits and gatherings, took a backseat”.

The woman (P10) mentioned that: “Funerals, engagements, and weddings either didn’t happen or were small. They used to be big, showy events, but they were easily cut down, which has pros and cons (Interviewee 10).”.

The woman (P6) mentioned that: “Core family or close kin relationships got disrupted, and the decrease in family interactions became even more noticeable”.

The woman (P2) mentioned that: “During COVID-19, many behaviors changed that we hadn’t seen before, like shaking hands during visits or hugging when friends and relatives met”.

**Changing mourning patterns**

One aspect of social boredom was the change in mourning patterns, which faced significant challenges and transformations compared to the COVID-19 era. During this time, mosques and religious places were closed, and mourning ceremonies either took place at home in a limited manner or were conducted online and through message exchanges. People were afraid to attend mourning ceremonies, and the grief for loved ones was held in solitude. All these characteristics represent a new pattern of mourning that did not exist before.

The man (P13) mentioned that: “For a while, mosques were completely closed, and someone who lost a relative would mourn in isolation and loneliness”.

The woman (P10) mentioned that: “One of our relatives died from COVID-19. I wore three masks and gloves when I went to their house. I was scared to breathe and kept thinking I’d caught COVID-19. When I got there, only two people were present, whereas in our area, usually hundreds of people show up when someone passes away, and it’s always very crowded for 2–3 days”.

The man (P17) mentioned that: “A new thing COVID-19 brought, which was unprecedented, was that no one attended mourning ceremonies. Instead, people used phones and new methods for offering condolences from a distance”.

The man (P4) mentioned that: “Mourning ceremonies were put on hold, and many activities shifted to the virtual space, which didn’t even exist before. Instead of visiting in person to offer condolences or attending mourning gatherings, many people used video calls, voice messages, or texts to express their sympathy”.

**Passive leisure**

Another result of COVID-19 in society was the emergence of a new type of leisure time that did not exist

before. COVID-19, along with the quarantine and the restrictions it brought, caused the leisure pattern in society to change. Activities previously done outside the home came to a halt, and physical activities and sports were reduced to a minimum. This situation was especially noticeable for children and students, who replaced outdoor play and physical activity with spending time on social media and virtual spaces.

*The woman (P11) mentioned that: "COVID-19 took childhood away from part of society. It shut down the physical activity for kids who used to go to parks, play, and interact. Kids' play and physical activities were minimal".*

*The man (P18) mentioned that: "If before, you had active leisure, like people going hiking, exercising, walking, or visiting relatives traditionally, that changed after COVID-19. When COVID-19 came, and with the rise of virtual spaces, passive leisure replaced active leisure".*

### **Ineffective education system**

The second widespread impact and transformation caused by COVID-19 relates to the education sector and society's inefficiency in coping with the changes brought about by COVID-19. With the spread of COVID-19, the education system could no longer fulfill its mission of teaching and training as it did before.

### **Reduced quality of education**

One aspect of the inefficiency of the education system during the COVID-19 outbreak was the significant drop in the quality of education. This decline was evident in all aspects of teaching and training. The indirect nature of education was one of the reasons for this drop in quality, as in this new educational approach, students did not receive structured and systematic instruction. Additionally, others often completed homework and evaluation tests instead of the students themselves. Ultimately, this situation led to academic decline due to a lack of access to virtual educational platforms and even resulted in students dropping out. Additionally, the limited access of lower socioeconomic classes and marginalized, and deprived areas of society to the internet and smartphones has also contributed to educational inequality.

*The woman (P2) mentioned that: "During this period, we experienced a decline in education. Even now that we've resumed in-person teaching, it's clear that students didn't receive a good education during those two years. It's obvious from the students we have now that they missed out on quality learn-*

*ing, and we'll need three years to make up for what should have been learned in one year".*

*The man (P15) mentioned that: "Because the education system, society, families, and students weren't ready to use virtual learning, students experienced the lowest level of education for two years. For example, second graders couldn't even write their names or recognize letters. Many family members did the writing, answering, and testing for them, which meant real education didn't happen".*

*The man (P7) mentioned that: "We had dropouts, but there was a form of education that lacked the necessary quality, adding to the existing educational issues".*

### **Change of educational environment**

Another example of ineffective education during this period is the shift from physical school or university environments to virtual spaces. In this new and complex process, educational and developmental tasks traditionally handled by schools were transferred to the internet and virtual platforms, making the home a new education setting. In this fundamental change, some behaviors, norms, and relationships typically developed in a physical school setting were lost. As a result, students did not become well-acquainted with concepts like classroom discipline, respect for elders, interaction with peers, and diversity in human relationships, which will pose challenges for them in the future.

*The man (P17) mentioned that: "The virtual space had to take over education, and in online learning, a new kind of relationship formed between kids, their teachers, the educational environment, and other students. Everyone was sitting at home, one kid on their bed, another at their desk, and another, for example, in the middle of their living room".*

*The man (P13) mentioned that: "Education isn't just about being in the classroom; part of learning comes from being in the school or university environment, interacting with people, experiencing the place, living in dorms, and conversing with other students".*

*The man (P3) mentioned that: "The disruptions in the education process also had their forms in universities. It's unclear if students who completed their master's degree online for those two years fully understood the academic environment. They didn't come to campus, didn't experience academic socialization, and didn't engage in university life. University has a thousand things: extracurricular activities, scientific associations, political and recreational activities. Students experience human relationships and the diversity of different ethnicities".*



### **Reproduction of inequality in education**

Another example of inefficient education during the COVID-19 era was the reproduction of inequality in education. The reason for this issue was the economic gap between people and the inability of all social and educational groups to access the online infrastructure for learning and education. Not all students, even university students, could attend online classes. Many learners from lower economic backgrounds were deprived of virtual education due to this problem and were even forced to work to earn an income.

*The woman (P10) mentioned that: "Schools are shutting down affected parts of society differently. Those with equipment and could use virtual learning were the least affected, but the parts of society that couldn't afford tablets and phones suffered the most".*

*The man (P1) mentioned that: "After COVID-19, 100% of education became virtual. Families in underprivileged areas and places without proper internet access were significantly impacted. Those who lacked cultural capital or couldn't use media, the same families who didn't have economic capital to provide educational tools, were left behind in virtual learning. They had no one around to help them and no financial means to buy the necessary equipment".*

*The man (P18) mentioned that: "Since the COVID-19 era was also a challenging economic period, underprivileged kids who couldn't afford phones went to work to earn money, causing delays in their return to education".*

### **Education system's abdication of its responsibilities**

Another aspect of the inefficiency in education during COVID-19 was the shifting of education and training responsibility from the school system to teachers, parents, and families. The education system essentially left those involved in the educational process to fend for themselves, with the principal educational burden falling on teachers and families who had to manage remote learning from home.

*The woman (P9) mentioned that: "Multiple parties are involved in education: the education system, the school, the teacher, the student, etc. However, during the pandemic, everything was dumped on the teacher and the family. The education system backed off, and no resources were provided to the students".*

*The woman (P16) mentioned that: "Two groups were pressured: teachers and families. Many families, especially mothers, had to take on the responsibili-*

*ties that should have been handled by the education system. It was like the education system abandoned its role, impacting both the teachers and family members".*

### **Display of inequalities in virtual education**

One of the consequences of COVID-19 was exposing inequalities to everyone and bringing them down to the very young, including students. Online education made many children and teenagers aware of economic and social disparities at a young age. The age at which they became aware of inequality changed, and kids could easily understand and analyze their differences with others through the media and online education.

*The woman (P20) mentioned that: "Kids don't understand inequality until a certain age, usually not until high school. However, COVID-19 brought that awareness down to younger kids in elementary school".*

*The man (P4) mentioned that: "So, how did kids become aware of inequality? COVID-19 made the home environment visible to each of the kids. In Iranian culture, there's a kind of self-presentation where people want to show their best side. Parents would set their kids up in the best spot in the house for online classes. Each kid had a phone and was told to turn on the camera and attend class, so they started noticing the differences. A young child would see that their friend's room was big and well-decorated while theirs was not, and they'd realize the inequality between them".*

### **Formation of a digital lifestyle**

The third significant consequence of COVID-19 was the formation and dominance of a digital lifestyle across all aspects of social life. This brought about widespread and novel impacts that were previously unseen in society.

### **Dominance of the internet and virtual space**

One significant outcome and detriment of COVID-19 was the absolute dominance of the internet and virtual space over people's real lives. This dominance was so extensive that real-life activities were largely suspended and diminished, with technology and the digital world controlling human lives. The negative aspect of this infiltration and usage of the internet and virtual space was the over-reliance on it, leading to a dependency that surpassed real needs. During the COVID-19 pandemic, the significant role of the internet and cyberspace in various aspects of life, such as education, information dissemination, and staying connected with friends and family,

became increasingly prominent. This new communication platform dominated all aspects of life.

*The man (P19) mentioned that: "Suddenly, COVID-19 hit and all social interactions came to a halt. Everything moved online, meaning real-life activities stopped, and we all turned to the virtual world".*

*The man (P15) mentioned that: "Virtual space took over the lives of everyone— men, women, the elderly, kids, and teenagers. COVID-19 increased our reliance on virtual technology beyond our actual needs because of necessity, but it's probably here to stay even after the need diminishes".*

*The woman (P2) mentioned that: "The infiltration of digital technologies and remote communication skyrocketed. We might have let the virtual world into our lives more than needed due to necessity, but even after it is gone, it likely won't completely leave our lives".*

#### **Displacement into virtual space**

One of the consequences of COVID-19 and increased internet access, especially among kids and teenagers, was unrestricted entry into the virtual world. In this new space, kids curiously explored the internet and viewed content unsuitable for their age and understanding. This sudden immersion into the unsafe online world threatened many social and cultural values, having a damaging impact on children and teenagers.

*The woman (P10) mentioned that: "COVID-19 caused teens and kids to be thrown into the online world suddenly. Schools, both non-profit and public, created virtual pages and posted content there for kids to see, and once you're in the online world, you might snoop around everywhere".*

*The man (P13) mentioned that: "In the digital domain, especially regarding kids and teens, a digital lifestyle inevitably started. It wasn't just about schoolwork; there were other things too... Usually, you wouldn't get your kid a phone until they were in high school, but during COVID-19, you had to get a phone for your six-year-old, a phone connected to the internet".*

*The man (P18) mentioned that: "Kids have certain restrictions from their parents at home and are under control at school and even in society. In the online world, families were initially unwilling to give their phones to kids, but during the COVID-19 crisis, they had to buy tablets or phones for their kids. Kids are curious, and they started exploring things that were previously restricted, which they wouldn't see*

*for years in society. This had a detrimental impact on family values and the students".*

#### **Formation of a new understanding and meaning of death and life**

The final impact of COVID-19 was shaping a new understanding of death and life for people. This fundamental shift changed the meaning of life and death for individuals, erasing the boundary between public and private spheres.

#### **Reconceptualization of death meaning**

COVID-19 altered and disrupted people's perception of death. The daily and frequent witnessing of deaths caused by the virus made death seem routine and ordinary to many. At the same time, it led individuals to realize that life is transient and that immortality does not exist.

*The man (P7) mentioned that: "COVID-19 taught people that life is fleeting and human fragility is very high... The instability and transience of life resonated with people".*

*The man (P12) mentioned that: "Seeing so many young deaths and untimely deaths changed your perception of death. The interpretation and mental world of humans collapsed to the phenomenon of death. For example, a 90-year-old would get COVID-19 and survive, while a strong 40-year-old might pass away".*

*The man (P1) mentioned that: "People have found new interpretations of the phenomenon called death and immortality, and fundamental shifts in how people interpret life and death have emerged".*

#### **Change of life meaning**

One of the widespread changes during and after COVID-19 is the shift in the meaning of life for many people. COVID-19 introduced a new pattern to people's lives, bringing new concepts such as individualism and rationalism to the forefront more than ever before. In this new life process, hedonism became a fundamental concept for people, something they pursued as much as possible. This new idea was heavily promoted, especially on social media.

*The woman (P14) mentioned that: "COVID-19 has caused changes in the meaning of life... Pleasure has become the focus for people, and the complete meaning of life has formed, with people becoming more individualistic".*

*The woman (P2) mentioned that: "Statements usually made by philosophers or writers are being*

*shared constantly, with people forwarding them to each other, like “Do we come to this world more than once? No, so make the most of it and enjoy your life.”*

### **Publicization of the private sphere**

The final aspect of the change in the meaning of life was the removal of the curtain and barriers between the public and private spheres of people's lives. Generally, based on the cultural and social characteristics of Iranian society, the private sphere has always been essential and belonged to the inner space of family and individuals. However, COVID-19 somewhat transferred this sphere to the public domain, and the display of personal and luxurious private life became a focus for people. Part of this normalization of displaying the private sphere was fake and performative.

*The woman (P11) mentioned that: “Because of the spread of technology and social networks, COVID-19 made a part of life that was completely private public. You see young couples and people showing parts of their lives that used to be considered private.”*

*The man (P21) mentioned that: “People are showing off their luxurious lives, most of which are fake, but the viewers don't realize it's fake. They compare themselves, especially teenagers. They keep comparing and might ask their parents for the same things, which their parents probably can't provide.”*

### **Discussion**

This study aimed to identify the emerging harms caused by COVID-19 in Iran. The results showed that the COVID-19 pandemic led to a range of issues and problems at various levels of society that were not considered social harms before the pandemic, given their prevalence and impact. According to the findings, social fatigue, ineffective education, digital lifestyle, and changes in the meaning of life and death are among the newly emerging social harms that have become prevalent in society after the COVID-19 outbreak.

One of the newly emerging harms caused by COVID-19 is social boredom. It refers to a state where individuals experience a kind of malaise and hopelessness due to the disruption of their previous social and routine activities, significantly diminishing their motivation to participate in social activities. When a large portion of the community is affected by this condition, it is termed social boredom. During the COVID-19 pandemic, social boredom became a significant issue as individuals faced prolonged periods of isolation and limited social interactions. The results showed that this condition occurs due

to social isolation, changes in social interaction patterns, altered mourning practices, and passive leisure activities. Given the contagious nature of the disease, quarantine was one of the main strategies to prevent its spread [25, 26], which led to the cessation of social interactions, isolation of people, disruption of familial relationships [27], reduction in social gatherings and visits [9], and a general decrease in social participation in ceremonies and events, altering social interaction patterns overall [28]. Moreover, with changes in mourning practices and the holding of mourning ceremonies through virtual spaces, farewells to loved ones and mourning occurred in solitude and isolation, increasing anxiety, worry, and psychological problems. Previous studies have shown that COVID-19 anxiety was one of the common disorders during the pandemic [29, 30]. The impact of these psychological issues was exacerbated by the prevalence of passive leisure and reduced physical activities. This condition and the minimal social participation and interactions led to increased individualism in society, with hedonism and other individual values replacing social values such as justice, cooperation, and responsibility [31, 32].

Another newly emerging issue caused by COVID-19 was the inefficiency of the education system. The inefficiency of education is considered newly emerging because, over recent decades, we have witnessed the development and progress of education with an overall forward-moving trend. However, with the outbreak of COVID-19 and the shift to online education, this trend halted and, in some aspects, regressed. Indirect teaching, the absence of proper education, and academic decline due to lack of access to virtual learning resulted in a decrease in the quality of education. Previous studies have shown that COVID-19 has altered the quality of education [33, 34]. Consistent with our finding, Sabzian et al. indicated that unfamiliarity with the requirements of virtual teaching, lack of motivation, educational discrimination, and the prevalence of cheating were among the most significant educational problems during the pandemic [31]. Virtual learning platforms have minimized the experience of educational settings, the level of interactions, and direct learning from peers, which, in the long run, reduces social participation and social capital while increasing social issues. Previous research has shown that individuals dependent on the internet exhibit more symptoms of depression, anxiety, physical complaints, and poor social functioning [35, 36]. Furthermore, virtual education has exacerbated educational inequality. Online education requires access to facilities and adequate infrastructure, and the insufficient access of the underprivileged and poor to the internet and virtual learning tools has harmed these groups and widened the educational gap. Previous studies have also highlighted the inequality in access to virtual learning

facilities during the pandemic [37–39]. Additionally, the age at which children perceive inequality has decreased due to the display of differences in family resources in educational videos and the sharing of parts of the home environment and relationships within it. This leads to an early understanding of disparities through comparison, inflicting irreversible harm on children and their families.

The formation of a digital lifestyle is another emerging issue during the COVID-19 pandemic. Although the use of digital technologies has increased and facilitated life with subsequent advancements since the last century, the change in the culture of utilizing these tools during COVID-19 highlighted their negative aspects. This led to a new lifestyle that jeopardized the quality of life for individuals and society. The negative consequences of excessive use of virtual spaces in this study align with the findings of Sabzian et al., which indicate that the using social networks reduced daily activities within the family environment and face-to-face interactions with family members [31]. Uncontrolled internet use and the expansion of digital activities have led to the shutdown of real-life spaces and social interactions, promoting remote virtual interactions. This has resulted in the increased penetration of digital technologies and an inability to use these spaces optimally and within normal limits. According to social harm theories (as per Durkheim), when the prevalence of an issue exceeds the average level, it can be considered social harm [40]. The COVID-19 era led to an immersion into the virtual world, granting unrestricted access to all available content. In some cases, the content contradicted social values and norms, causing the spread of negative consequences of virtual space usage. These include online fraud [41], internet addiction [42], the proliferation of immorality [43], virtual violence [44], and more, exceeding the expected levels within society.

Another identified issue in the present study was forming a new understanding and meaning of death and life. COVID-19 led to a deconstruction of the concept of death. The pandemic significantly disrupted established beliefs and perceptions regarding death. Prior to COVID-19, many individuals tended to regard death as a distant or abstract concept, typically associated with natural causes or advanced age. However, the sudden and widespread fatalities resulting from the virus compelled individuals to confront the reality of death more directly and frequently than they had in the past. This shift in perspective has profound implications for societal attitudes toward mortality. The collapse of the previous perception of death, witnessing numerous deaths, and the normalization of it changed people's mindset about mortality and immortality, and altered their interpretation of death. This led to a significant reduction in empathy and sympathy for the bereaved. Consequently, family members and the bereaved struggled with severe psychological

problems, making it harder for them to cope with the loss of their loved ones [45–47]. Moreover, the increased display of personal lives and the normalization of showing private spheres exacerbated human differences through comparison and display, diverting attention from the pain and suffering caused by death and its psychological burden on the bereaved. Death causes social and psychological issues for survivors, some of which are mitigated through empathy and social interactions. However, during COVID-19, with its associated restrictions, individuals had to bear the entire burden themselves, minimizing the possibility of receiving empathy and support from others.

#### **Limitations and strengths of the study**

The present study adopted a qualitative approach and delved deeply into exploring emerging harms caused by COVID-19. It turned out to be the one of the first study to approach the continuous negative consequences of COVID-19 from this perspective and a different angle. Nevertheless, this research also faced limitations. One of the primary limitations was the absence of a unified and agreed-upon definition regarding newly emerged social harms, which challenged the differentiation between newly emerged issues and pre-existing social issues.

One of the significant limitations was that due to the prevalence of COVID-19, some participants were unwilling to participate in face-to-face interviews. The researcher addressed their concerns by adhering to health protocols and providing gloves and masks to participants maintaining distance during interviews made some participants uncomfortable, thereby hindering the creation of an intimate space between the researcher and the participants. Lastly, considering the study's approach, naming newly emerged social harms may pose challenges due to their novelty, whereas codes and descriptions indicate their emergent nature. Future research can conduct cross-sectional studies based on the results of the present study to confirm its findings or intervention studies aimed at reducing the impact of these harms. Additionally, conducting research on a broader scale among the general population, rather than just specialists and experts, can be pursued in the future. Finally, researchers can utilize innovative qualitative methods such as Online Photovoice (OPV), Online Interpretative Phenomenological Analysis (OIPA), and Community-Based Participatory Research (CBPR) approaches to explore the topic of this article in different social and cultural contexts.

#### **Conclusion**

The COVID-19 pandemic, as a significant variable in the current century, has ushered in a new era in human life to the extent that even after the end of its peak, the evident and latent consequences continue to reshape and

sustain profound changes in societies. The global spread of the coronavirus has not only had health repercussions but also persistent social consequences. These include heightened social vulnerabilities and the emergence of various new issues such as social fatigue, ineffective education and upbringing, digital lifestyles, and shifts in the understanding of life and death. Each of these requires fundamental interventions and policies. Since every social crisis is due to various issues and problems, understanding their dimensions and characteristics is crucial as a first step in crisis management. On the other hand, considering that the expansion of social welfare in society requires control and management of social harms, identifying these harms along with their determinants and consequences, and formulating appropriate and practical policies to control them, will create the necessary framework for achieving social welfare. The lack of clear policies in this area can lead to increased social harms and consequences, resulting in sectoral coordination weaknesses and improper resource management. In this regard, actions such as informing and educating the people about the necessity of adhering to protocols and distancing during pandemic crises through schools, media, and other educational institutions are essential. Additionally, providing virtual education platforms such as internet access and communication infrastructure by the government and educational organizations is crucial for addressing pandemic crises. Efforts should be made to strengthen the role of educational organizations during crises instead of abdicating responsibility and withdrawing from them. Furthermore, it is recommended to channel digital lifestyles towards education and promote appropriate and scientific use of technology by preparing educational and entertaining programs for various audiences.

#### Acknowledgements

This research was supported by the Iran University of Medical Sciences under Grant: (Grant Number 1400-3-90- 22318). All participants in this study are appreciated.

#### Author contributions

S.F.I., N.S., and S.A. had equal contributions in designing the study. F.I., S.A. and J.Y.L. collected the data and the data were analyzed by S.F.I., and S.A. N.S., S.F.I., S.A., had cooperation in the drafting of the manuscript and M.N., and A.T.B. had a critical revision of the manuscript and approval of the article. All authors reviewed and have given approval to the final version of the manuscript.

#### Funding

This research was supported by the Iran University of Medical Sciences under Grant: (Grant Number 1400-3-90- 22318).

#### Data availability

The data that support the findings of this study are available from the Iran University of Medical Sciences, but restrictions apply to the availability of these data, which were used under license for the current study and so are not publicly available. The data are, however, available from the corresponding authors on reasonable request and with the permission of the Iran University of Medical Sciences.

#### Declarations

##### Ethics approval and consent to participate

This study was conducted following the principles outlined in the Declaration of Helsinki. This study was approved by the Research Ethics Committee of the Iran University of Medical Sciences, Tehran, Iran (IR.IUMS.REC.1400.1194). All participants were informed about the study's aims and objectives, and written consent for in-person interviews, along with verbal consent for online interviews, was obtained from each participant prior to their involvement.

##### Consent for publication

Not Applicable.

##### Competing interests

The authors declare no competing interests.

##### Abbreviations

Not applicable.

##### Supplementary Information

Not applicable.

Received: 9 October 2024 / Accepted: 17 January 2025

Published online: 29 January 2025

#### References

1. Mollalo A, Vahedi B, Rivera KM. GIS-based spatial modeling of COVID-19 incidence rate in the continental United States. *Sci Total Environ.* 2020;728:138884. <https://doi.org/10.1016/j.scitotenv.2020.138884>.
2. Yoosefi Lebni J, Irandoost SF, Safari H, Xosravi T, Ahmadi S, Soofizad G, et al. Lived experiences and challenges of the families of COVID-19 victims: a qualitative phenomenological study in Tehran, Iran. *Inquiry.* 2022;59:469580221081405. <https://doi.org/10.1177/00469580221081405>.
3. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al. A novel coronavirus from patients with Pneumonia in China, 2019. *N Engl J Med.* 2020;382(8):727–33. <https://doi.org/10.1056/NEJMoa2001017>.
4. Yoosefi Lebni J, Enayat H, Irandoost SF, Dehghan AA. Exploring the challenges of Afghan Refugee women facing COVID-19: a qualitative study in Iran. *Front Public Health.* 2022;10:838965. <https://doi.org/10.3389/fpubh.2022.838965>.
5. Irandoost SF, Sedighi S, Hoseini AS, Ahmadi A, Safari H, Ebadi Fard Azar F, et al. Activities and challenges of volunteers in confrontation with COVID-19: a qualitative study in Iran. *Int J Disaster Risk Reduct.* 2022;82:103314. <https://doi.org/10.1016/j.ijdrr.2022.103314>.
6. Ahmadi S, Irandoost SF, Ahmadi A, Yoosefi Lebni J, Mohammadi Gharehghani MA, Baba Safari N. Explaining experiences, challenges and adaptation strategies in COVID-19 patients: a qualitative study in Iran. *Front Public Health.* 2021;9:778026. <https://doi.org/10.3389/fpubh.2021.778026>.
7. Worldometer - real time world statistics, (2024). *Corona Virus.* <https://www.worldometers.info/coronavirus/>
8. Xiao C. A Novel Approach of Consultation on 2019 Novel Coronavirus (COVID-19)-Related Psychological and Mental problems: structured letter therapy. *Psychiatry Investig.* 2020;17(2):175–6. <https://doi.org/10.30773/pi.2020.0047>.
9. Yoosefi Lebni J, Irandoost SF, Xosravi T, Ahmadi S, Ziapour A, Soofizad G et al. Explaining the problems faced by Iranian housewives during the COVID-19 quarantine period, and their adaption strategies: a qualitative study. 2021;17:17455065211063291 <https://doi.org/10.1177/17455065211063291>
10. SoleimanvandiAzar N, Irandoost SF, Ahmadi S, Xosravi T, Ranjbar H, Mansourian M, et al. Explaining the reasons for not maintaining the health guidelines to prevent COVID-19 in high-risk jobs: a qualitative study in Iran. *BMC Public Health.* 2021;21(1):848. <https://doi.org/10.1186/s12889-021-10889-4>.
11. Yoosefi Lebni J, Pavee S, Ahmadi A, Irandoost SF, Masoumi F. The consequences of the outbreak of COVID-19 in Iran: a qualitative study from the perspective of key informants. *Int J Disaster Risk Reduct.* 2024;104:104363. <https://doi.org/10.1016/j.ijdrr.2024.104363>.
12. Oyebo O, Ndulue C, Adib A, Mulchandani D, Suruliraj B, Orji FA, et al. Health, Psychosocial, and Social issues emanating from the COVID-19 pandemic based on Social Media comments: text mining and thematic analysis Approach. *JMIR Med Inf.* 2021;9(4):e22734. <https://doi.org/10.2196/22734>.

13. Sahoo S, Rani S, Parveen S, Singh AP, Mehra A, Chakrabarti S, et al. Self-harm and COVID-19 pandemic: an emerging concern—A report of 2 cases from India. *Asian J Psychiatry*. 2020;51:102104. <https://doi.org/10.1016/j.ajp.2020.10.2104>.
14. Ghaderi MAJPSQ. The new damage; examining the impact of virtual social networks on divorce young couples (Isfahan Case Study). 2017;1396(13):1–14.
15. Rasul G, Nepal AK, Hussain A, Maharjan A, Joshi S, Lama A, et al. Socio-Economic implications of COVID-19 pandemic in South Asia: emerging risks and growing challenges. *Front Sociol*. 2021;6:629693. <https://doi.org/10.3389/fsoc.2021.629693>.
16. Caballero-Morales S-OJR. finance. Innovation as recovery strategy for SMEs in emerging economies during the COVID-19 pandemic. 2021;57:101396 <https://doi.org/10.1016/j.ribaf.2021.101396>
17. De Jong M, Ho ATJJPB, Accounting, Management F. Emerging fiscal health and governance concerns resulting from COVID-19 challenges. 2021;33(1):1–11 <https://doi.org/10.1108/JPBAFM-07-2020-0137>
18. Fofana NK, Latif F, Sarfraz S, Bilal, Bashir MF, Komal B. Fear and agony of the pandemic leading to stress and mental illness: an emerging crisis in the novel coronavirus (COVID-19) outbreak. *Psychiatry Res*. 2020;291:113230. <https://doi.org/10.1016/j.psychres.2020.113230>.
19. Antiporta DA, Bruni A. Emerging mental health challenges, strategies, and opportunities in the context of the COVID-19 pandemic: perspectives from South American decision-makers. *Rev Panam Salud Publica*. 2020;44:e154. <https://doi.org/10.26633/RPSP.2020.154>.
20. Poudel AN, Zhu S, Cooper N, Roderick P, Alwan N, Tarrant C, et al. Impact of Covid-19 on health-related quality of life of patients: a structured review. *PLoS ONE*. 2021;16(10):e0259164. <https://doi.org/10.1371/journal.pone.0259164>.
21. Speziale HS, Streubert HJ, Carpenter DR. Qualitative research in nursing: advancing the humanistic imperative. Lippincott Williams & Wilkins; 2011.
22. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*. 2004;24(2):105–12. <https://doi.org/10.1016/j.nedt.2003.10.001>.
23. Lincoln YS, Lynham SA, Guba EG. Paradigmatic controversies, contradictions, and emerging confluences, revisited. *Sage Handb Qualitative Res*. 2011;4(2):97–128.
24. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349–57. <https://doi.org/10.1093/intqhc/mzm042>.
25. Lima CKT, Carvalho PMM, Lima I, Nunes J, Saraiva JS, de Souza RI, et al. The emotional impact of Coronavirus 2019-nCoV (new coronavirus disease). *Psychiatry Res*. 2020;287:112915. <https://doi.org/10.1016/j.psychres.2020.112915>.
26. Girum T, Lentiro K, Geremew M, Migora B, Shewamare S. Global strategies and effectiveness for COVID-19 prevention through contact tracing, screening, quarantine, and isolation: a systematic review. *Trop Med Health*. 2020;48:1–15. <https://doi.org/10.1186/s41182-020-00285-w>.
27. Di Nicola P, Ruspini E. Family and family relations at the time of COVID-19: an introduction. *Italian Sociol Rev*. 2020;10(35):679–. <https://doi.org/10.13136/isr.v10i35.393>.
28. Long E, Patterson S, Maxwell K, Blake C, Boso Perez R, Lewis R, et al. COVID-19 pandemic and its impact on social relationships and health. *J Epidemiol Community Health*. 2022;76(2):128–32. <https://doi.org/10.1136/jech-2021-216690>.
29. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *Int J Environ Res Public Health*. 2020;17(5):1729. <https://doi.org/10.3390/ijerph17051729>.
30. Moghanibashi-Mansourieh A. Assessing the anxiety level of Iranian general population during COVID-19 outbreak. *Asian J Psychiatr*. 2020. <https://doi.org/10.1016/j.ajp.2020.102076>.
31. Sabzian S, Garavand H, Alipour M. Designing and validating of the emerging social and familial injuries affected by Corona. *J Iran Social Dev Stud*. 2023;15(57):207–33.
32. Nejad FN, Gharehghani MAM, Ahmadi S. Collective and individual rationality dilemma and the failure of anti-covid-19 policies: why some people don't wear masks? *Int J Surg*. 2022;105:106866. <https://doi.org/10.1016/j.ijsu.2022.106866>.
33. Alhammadi S. The effect of the COVID-19 pandemic on learning quality and practices in higher education—using deep and surface approaches. *Educ Sci*. 2021;11(9):462. <https://doi.org/10.3390/educsci11090462>.
34. Lassoued Z, Alhendawi M, Bashitialshaaer R. An exploratory study of the obstacles for achieving quality in distance learning during the COVID-19 pandemic. *Educ Sci*. 2020;10(9):232. <https://doi.org/10.3390/educsci10090232>.
35. Xie X, Cheng H, Chen Z. Anxiety predicts internet addiction, which predicts depression among male college students: a cross-lagged comparison by sex. *Front Psychol*. 2023;13:1102066. <https://doi.org/10.3389/fpsyg.2022.1102066>.
36. Zhao L, Li X, Yang Q, Peng Y, Jiang L, Jia P, et al. The longitudinal association between internet addiction and depressive and anxiety symptoms among Chinese adolescents before and during the COVID-19 pandemic. *Front Public Health*. 2023;10:1096660. <https://doi.org/10.3389/fpubh.2022.1096660>.
37. Eze UN, Sefotho MM, Onyishi CN, Eseadi C. Impact of COVID-19 pandemic on education in Nigeria: implications for policy and practice of e-Learning. *Online Submission*; 2021.
38. Aboagye E, Yawson JA, Appiah KN. COVID-19 and E-learning: the challenges of students in tertiary institutions. *Social Educ Res*. 2021:1–8 <https://doi.org/10.37256/ser.212021422>
39. Kombe CL, Mtonga DE. Challenges and interventions of eLearning for under resourced students amid covid-19 lockdown: a case of a Zambian public university. *J Student Affairs Afr*. 2021;9(1):23. <https://doi.org/10.24085/jjaa.v9i1.1426>.–39–23–. 39.
40. Şeker A. An analysis of the method of understanding social problems through Sociological Imagery in Social Theory. *J Curr Researches Social Sci*. 2020;10(2):431–42. <https://doi.org/10.26579/jocress.373>.
41. Oluga SO, Ahmad ABH, Alnagrat AJA, Oluwatosis HS, Sawad MOA, Muktar NAB. An overview of contemporary cyberspace activities and the challenging cyberspace crimes/threats. *Int J Comput Sci Inform Secur*. 2014;12(3):62.
42. Niu H-J, Chang C-T. Addiction in cyberspace: flow experience on e-shopping. *Int J Web Based Communities*. 2014;10(1):52–68. <https://doi.org/10.1504/IJWBBC.2014.058386>.
43. Bibak Z, Jafari M. Examining the risks and social harms of cyberspace on children and teenagers. *J Psychosociological Res Family Cult*. 2023;1(1):1–4. <https://doi.org/10.61838/kman.jpfc.1.1.1>.
44. Grigorescu A, Chitescu R-I, Cyberspace.–A Challenge. *Strategica Challenging the Status Quo in Management and Economics STRATEGICA– International Academic Conference, sixth edition, Bucharest, October 2018:824–37*.
45. Hernández-Fernández C, Meneses-Falcón C. I can't believe they are dead. Death and mourning in the absence of goodbyes during the COVID-19 pandemic. *Health Soc Care Commun*. 2022;30(4):e1220–32. <https://doi.org/10.1111/hsc.13530>.
46. Das S, Singh T, Varma R, Arya YK. Death and mourning process in frontline health care professionals and their families during COVID-19. *Front Psychiatry*. 2021;12:624428. <https://doi.org/10.3389/fpsyg.2021.624428>.
47. Giménez-Llort L, Torres-Lista V, Oghagbon EK, Pereira HVFS, Gijberts M-JH, Invitto S. Death and mourning processes in the Times of the Coronavirus Pandemic (COVID-19). 2022; <https://doi.org/10.3389/978-2-88976-099-2>

## Publisher's note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.