Clinical and Experimental Health Sciences

Unmet Health Needs During the COVID-19 Pandemic

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ABSTRACT

Objective: This study aimed to identify the unmet health needs of adults during the COVID-19 pandemic, the reasons for these needs, solutions sought and socio-demographic determinants.

Methods: The cross-sectional online survey was conducted with 2,074 adult individuals from December 15 to December 31, 2020. Data were collected using Socio-demographic Data Collection Form, Unmet Health Needs Data Collection Form and World Health Organization Quality of Life Scale (WHOQOL).

Results: The percentage of the participants who stated that they had unmet health needs was 66% and the most unmet needs reported were oral and dental treatment (46.3%), eye health and treatment for vision disorders (22.5%), and early diagnosis and annual health screening (11.4%). The reasons with the most impact on the emergence of these needs were fear of being infected with the virus (44.3%), lack of access to health care (42.7%) and not wanting to cause a burden on the health system. There was a significant difference between the groups with and without unmet health needs in terms of gender, economic status, presence of health insurance, presence of chronic disease, perception of health, and WHOQOL total scores.

Conclusion: The findings obtained will benefit policymakers in the rational use of limited resources and making strategic arrangements for needs.

Keywords: Adult, COVID-19, Coronavirus, Unmet Health Needs

1. INTRODUCTION

The world is going through a challenging period due to coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). Most of the countries declared a state of emergency and took different measures, including self-isolation, lockdown, and social isolation, to alleviate the spread of disease, protect individuals and disburden health systems (1). Since December 2019, when the first COVID-19 case was recorded, health services throughout the globe have faced increasing pressure, with over 331 million cases and nearly six million deaths (2). Republic of Turkey Ministry of Health declared the first case identified in Turkey on March 11 and the first death from COVID-19 on March 17 (1). Immediately afterwards, many measures were taken to minimize contact and ensure social isolation. These measures included travel restrictions, mandatory quarantine for those with a history of overseas travel, border closures, suspension of education, temporary postponement of activities, closure of common use areas (cafeteria, hairdressers, shopping malls, etc.), and lockdown restrictions. Moreover, during the times when the most stringent measures were taken, the following measures were also implemented with regard to health care services: visitor and attendant restrictions in hospitals, patients with refills being able to buy their medicines from pharmacies without applying to a health care institution, admitting only those with an appointment to hospitals, transformation of many hospitals to pandemic hospitals, suspension or restriction of outpatient clinic examinations, suspension of elective surgeries, and calling people not to come to hospitals unless there is an emergency (3).

During the pandemic, limited health care personnel and resources have been widely directed to the efforts to control and treat COVID-19 rather than routine health service provision. As people still need other routine health services, the necessity of providing services to individuals with and without COVID-19 within the same system has emerged during the pandemic period, in which all efforts have been

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carried out to control. On the other hand, not only many health care providers have restricted patient visits or closed their practices due to the pandemic, but also both healthy individuals and patients have avoided using health care services (4). In an analysis using the data obtained from more than 50,000 health care providers that are Phreesia clients, outpatient visits between February and April 2020 have been reported to decrease by about 60%. As of March 2020, the number of outpatient visits for children aged three to 17 years has dramatically fallen to below 70% (5). Data from the United States Census Bureau research has shown that up to 36% of adults postponed their health care due to the epidemic and up to 28% did not receive the medical care they needed (6). (4). It would not be wrong to say that the accessibility of health care services for the general population has been interrupted in all developed and developing countries exposed to the COVID-19 outbreak. The epidemic and response to the epidemic have resulted in reduced access to health care services and a significant decrease in its use (4-6). While structural reasons include the fact that many doctors and clinics closed their offices or limited face-to-face visits during the first months of the crisis (7), the followings should be considered among other reasons: job and health insurance losses, difficulties in transportation and childcare, and fear of being infected with or transmitting the virus (8-12).

The impact of the pandemic on public health is not directly limited to the morbidity and mortality caused by COVID-19. The indirect results of the pandemic in the long term and the social response to it may have far-reaching and serious consequences. The most important one of them is unmet or delayed health needs. The concept of unmet health needs is often used to measure the population's accessibility to health services and equity in access to these services. Health services mainly aim to protect, improve and maintain the physical, mental and social health of the individual and society. The realization of this purpose is only possible when people can access health services without encountering any obstacles (13-15). Unmet health care needs occur if health care is not received when required or the health service received is not suitable or adequate for the health conditions of the individual (16). Delayed or nonreceipt of medical care may result in more severe illness for the patient, increased complications, a worse prognosis, and longer hospital stays or treatment period for both healthy individuals or patients (17,18). In the 2014–2015 Ebola epidemic during which more than 28,000 people were infected and over 11,000 people died, significant reductions have been reported in maternity care, malaria admissions, immunization and the use of health care services in affected areas, particularly among women and children. Moreover, the epidemic has prevented the diagnosis and treatment of endemic diseases, increased morbidity and mortality, and reduced life expectancy. Many sources have shown that the increasing number of deaths caused by measles, malaria, HIV/AIDS and tuberculosis have outpaced the number of deaths from Ebola and it has been argued that the consequences of unmet health needs are more severe than the epidemic itself (19-21). The Ebola outbreak provides insight into the points we need to pay attention to and focus on regarding the current COVID-19 pandemic. Furthermore, the World Health Organization suggests that countries should make difficult decisions and engage in strategic planning and coordinated action to respond to the pandemic that creates serious pressure on the health system (21). Determining the health needs of the society may contribute to the rational use of limited resources and prevent the long-term negative impacts of the pandemic (19, 21, 22).

To the best of our knowledge, there is no comprehensive scientific study presenting unmet health needs in the Turkish adult population associated with the COVID-19 pandemic. Therefore, this study aimed to identify the unmet health needs of adults during the COVID-19 pandemic, the reasons for these needs, solutions sought, and socio-demographic determinants. With the results of the present study, it was aimed to emphasize the potential negative long-term impact of the epidemic on the Turkish population. We believe that the results will provide important information to health care workers, policymakers and managers, as well as contributing to efforts to improve access to health services.

2. METHODS

This cross-sectional study was conducted from December 15 to December 31, 2020. In the study, no sampling was performed and a total of 2,074 participants having no mental disability, being a Turkish speaker, living in Turkey, being within the age range of 18-65 years, being able to be reached, and volunteering to participate in the study were included.

2.1. Socio-demographic Data Collection Form

This form consists of questions about age, gender, marital status, economic status, household size, place of residence during the pandemic, employment status, presence of physical disability, health insurance and chronic disease.

2.2. Unmet Health Needs Data Collection Form

The form that evaluates the unmet health needs of the participants during the COVID-19 pandemic was created in line with the literature (23-25). It contains the questions "how has health status changed during the pandemic", "what are unmet or delayed health needs", "what are reasons for not meeting these needs", and "what are the solutions found for unmet health needs". Participants were asked to answer all questions, considering the pandemic starting from March 11, 2020, to the present day. Pilot testing was performed with seven individuals for clarity. Data from seven participants in the pilot study were not included in the main study findings.

2.3. World Health Organization Quality of Life Scale (WHOQOL)

It is a 27-item scale that evaluates how an individual perceives the quality of life. Eser et al. performed the Turkish validity and reliability study of the scale in 1999 and adapted it to the Turkish population. This scale has four domains: physical health, psychological health, social relationships, and environmental health. The questions are of a typical 5-point Likert-type ordinal rating scale type. A maximum of 20 points can be obtained from each sub-dimension. The total score of the scale is 100. Higher scale scores represent higher quality of life (26). In this study, Cronbach's alpha coefficient of the scale was found to be 0.86.

The research data was collected through an online questionnaire. The questionnaire was applied to the individuals in the ninth month following the initiation of COVID-19 control measures in Turkey. Adults were invited to participate in the study through WhatsApp groups for university students, social media, and forums. The questionnaire form used to collect study data was prepared via "Google Forms" to be answered online. Answering the questionnaire took maximum of 20 minutes. A total of 13 questionnaires were excluded from the study due to missing answers.

All statistical analyses were performed using SPSS version 21.0 software (Statistical Packages for Social Sciences). Descriptive statistics were expressed as mean, standard deviation, minimum and maximum for continuous variables and as numbers and percentages for categorical variables. Mann-Whitney U test was used to compare continuous numerical variables for significance statistics. Chi-square test was used to determine the correlations between categorical variables. The statistical significance level was taken in the calculations as 5%. A p value of <0.05 was considered statistically significant and results were evaluated at a 95% confidence interval.

The Republic of Turkey Ministry of Health approved the study. The ethics committee approval was obtained from Ethics Committee of Tekirdağ Namık Kemal University (date: 24.11.2020 and number: 2020.252.11.12). The informed consent form was added to the first page of the online data collection form. Participants answered the data collection form after reading the informed consent form and voluntarily accepting to participate in the study.

3. RESULTS

Among 2,074 participants aged 18-65 years, 66% (n:1368) stated that they had unmet health needs during the pandemic. The mean age of these participants was 26.95±10.61 years and 89% (n:1218) did not have COVID-19, 79.5% (n:1088) were females, 70.5% (n:964) were single, and 55.6% (n:760) stated their economic status as income equal to expenses. The mean household size was 4.12±1.55 and 54.2% (n:742) stated that they were residing in the province during the pandemic, 71.6% (n:980) were unemployed or student, 99.2% (n:1357) had no physical disability, 79% (n:1081) had general health insurance, 84.6% (n:1158) had no chronic disease, and 68.9% (n:942) stated that there was no change in their health during the pandemic. The WHOQOL total score of the participants who stated that they had an unmet health need was 83.34±11.71 (Table 1).

The mean age of 706 participants who stated that they had no unmet health needs was 26.63±10.12 years and 89.4% (n:631) did not have COVID-19, 69.5% (n:491) were females, 70.3% (n:469) were single, and 60.3% (n:426) stated their economic status as income equal to expenses. The mean household size was 4.15±1.44 and 53.4% (n:377) stated that they were residing in the province during the pandemic, 73.8% (n:521) were unemployed or student, 99.6% (n:703) had no physical disability, 73.4% (n:518) had general health insurance, 89.5% (n:632) had no chronic disease, and 83.4% (n:589) stated that there was no change in their health during the pandemic. The WHOQOL total score of the participants who stated that they had no unmet health needs was 89.36±12.41 (Table 1.).

There was a statistically significant difference between the groups with and without unmet health needs during the pandemic in terms of gender (X^2:25.553; p:0.000), economic status (X^2:13.822; p:0.001), health insurance (X^2:10.022; p:0.007), presence of chronic disease (X^2:9.342; p:0.002) and health perception (X^2:71.925; p:0.000). Mann-Whitney U analysis performed to understand the reason for this differentiation showed a significant difference in favor of females, participants who stated their economic status as income less than expense or income equal to expense, those with general health insurance or without health insurance, those with chronic diseases, and participants who perceived that their health was worse and did not change during the pandemic. Furthermore, there was also a significant difference between the two groups with and without unmet health needs in terms of the mean WHOQOL total scores (U:338075.5; p:.0.000) (Table 1.).

The unmet health needs mostly reported by the participants during the pandemic were found to be oral and dental treatment (46.3%), eye health and treatment for vision disorders (22.5%), early diagnosis and annual health screening (11.4%), health care for mental and psychiatric problems (7.2%), and follow-up and monitoring of chronic diseases (6.5%) (Table 2).

The reasons for unmet health needs were found to be the fear of catching the virus from health care personnel or hospital (44.3%), closure of health care institutions due to the pandemic or not being able to reach a specialist (physician/dentist) (42.7%), not wanting to burden the health system (37.1%), not wanting to cause a burden on the health system, believing that the health problem was not very urgent (26.2%), and not wanting to use public transport (21.1%) (Table 2).

When the solutions found for unmet health needs were evaluated, 41.4% of the participants stated that they did nothing whereas 17.6% stated that they applied herbal or alternative medicine techniques, 16.1% used medicines available at home, 11% had followed the recommendations from media such as the internet, television or radio, and 10.4% had received support by calling a health care personnel they knew on the phone.

Table 1. *Socio-demographic and medical characteristics of participants (n=2074).*

	Health Needs			
	Yes **% (n) or mean±SD**	**No** **% (n) or mean±SD**	**Test**	**p**
COVID-19 survivors				
Yes	11% (150)	10.6% (75)	X^2: 0.056	0.813
No	89% (1218)	89.4% (631)		
Age	26.95±10.61	26.63±10.12	U:472596; Z:-.801	0.423
Gender				
Female	79.5% (1088)	69.5% (491)	X^2: 25.553	**0.000**
Male	20.5% (280)	30.5% (215)		
Marital status				
Single	70.5% (964)	70.3% (469)		
Married/cohabiting	27.4% (375)	28.2% (199)	X^2: 0.866	0.649
Separated/divorced	2.1% (29)	1.6% (11)		
Economical status				
Income less than expenses	29% (397)	21.5% (152)		
Income equal to expenses	55.6% (760)	60.3% (426)	X^2: 13.822	**0.001**
Income more than expenses	15.4% (211)	18.1% (128)		
Household size	4.12±1.55	4.15±1.44	U:471536; Z:-.909	0.363
Place of residence during the pandemic				
Province center	54.2% (742)	53.4% (377)		
District center	35.1% (480)	35.6% (251)	X^2: 0.150	0.928
Village/town	10.7% (146)	11% (78)		
Wage-earning employment				
Yes	28.4% (388)	26.2% (185)	X^2: 1.085	0.298
No	71.6% (980)	73.8% (521)		
Physical disability status				
Yes	0.8% (11)	0.4% (3)	X^2: 0.999	0.318
No	99.2% (1357)	99.6% (703)		
Health insurance				
No	17.3% (236)	20.7% (146)		
General health insurance	79% (1081)	73.4% (518)	X^2: 10.022	**0.007**
Private health insurance	3.7% (51)	5.9% (42)		
Presence of a chronic disease				
Yes	15.4% (210)	10.5% (74)	X^2: 9.342	**0.002**
No	84.6% (1158)	89.5% (632)		
Perception of health during the COVID-19 pandemic				
Better	3.4% (47)	5.1% (36)		
Worse	27.7% (379)	11.5% (81)	X^2: 71.925	**0.000**
No change	68.9% (942)	83.4% (589)		
WHOQOL total score	83.34±11.71	89.36±12.41	U:338075.5; Z:-11.211	**0.000**

U: Mann-Whitney U, X^2: Chi-Square Test, WHOQOL: World Health Organization Quality of Life Scale

Table 2. *The causes of unmet health needs during the pandemic and the distribution of solutions found (n:1368).*

Unmet health needs	% (n)
Oral and dental treatment	46.3% (960)
Eye health and treatment for vision disorders	22.5% (466)
Early diagnosis and annual health screening	11.4% (238)
Health care for mental and psychiatric problems	7.2% (149)
Follow-up and monitoring of chronic diseases	6.5% (134)
Surgery/surgical procedure	5.0% (104)
Drug/medical equipment/device supply	4.7% (96)
Physiotherapy services	4.7% (97)
Vaccination/immunization services	3.7% (76)
Medical therapy	3.5% (73)
Control examinations	2.9% (60)
Emergency and first aid service	1.3% (26)
Follow-up and monitoring of pregnant/puerperant	0.6% (13)
Health education/consultancy services	0.5% (10)
Family planning/contraception methods	0.0% (1)
Reasons for unmet health needs	
Fear of catching the virus from health care personnel or hospital	44.3% (919)
Health care institutions were closed or it was not possible to reach a specialist	42.7% (887)
Not wanting to cause a burden on the extremely busy health system	37.1% (770)
Believing that the health problem is not so urgent	26.2% (544)
Not wanting to use public transport	21.1% (437)
Appointment scheduled for a date in the distant future	12.2% (252)
Wanting to wait and see if the health problem will go away on its own	7.5% (156)
Having no time due to daily responsibilities	5.2% (108)
Having no trust in the health services provided or believing that it will be inadequate	5.1% (105)
Being unable to spare money for health care expenses	4.8% (99)
Lack of health care institutions at close range	4.6% (95)
Having no health insurance	2.4% (50)
Fear of doctors	1.6% (33)
Not knowing where to go	1.0% (21)
Solution for unmet health needs	
I did not do anything	41.4% (859)
I applied herbal or alternative medicine methods	17.6% (364)
I used medicines available at home	16.1% (334)
I followed the recommendations from the media such as the internet, television, or radio	11% (229)
I received support from a health care personnel I knew over the phone	10.4% (216)
I followed the advice of my friends, neighbours and relatives	4% (83)
I went to healers who were not medical personnel	0.2% (4)

4. DISCUSSION

Discussions about unmet health needs during the pandemic often focus on testing or treatment of COVID-19. This population-based study emphasizes the impact of the pandemic on the health needs and quality of life of the adult population living in Turkey. The social burden of unmet health needs being ignored during the fight against pandemic may go beyond direct health effects and negatively affect the potential productivity of adults in the long term.

In a study by Yetim and Celik, in which dataset gathered from Turkey Health Interview Survey 2016 was used, the level of unmet health needs was reported to be around 13.2% in Turkey (13). However, this does not seem to be the case during the pandemic. Two out of every three adults participating in the study stated that they had unmet health needs. This finding has made it increasingly clear that the pandemic has dramatic negative effects on the availability or accessibility of health services for non-COVID-19 related health needs. Ray et al. reported that more than half of families had unmet health or social service needs in the first month of the home quarantine process (27). The pandemic has been further shown to increase unmet health needs in India. These unmet needs have increased even more in cases where health resources and health care personnel are deployed to manage

the COVID-19 pandemic, disrupting routine and emergency health care services (11, 12).

This study is also important in terms of revealing determinants at the individual scale for unmet health needs during the pandemic period. Within the adult age group; women, those with low economic status, those who have general health insurance or no health insurance, individuals with chronic illnesses, those who perceive their health as worse and unchanged during the pandemic process compared to the past, and people with poor quality of life have been identified as vulnerable or at risk. Wani reported that unmet needs varied according to race, ethnicity, income and length of stay at home (11). Yetim and Celik also found that unmet health needs were higher among women and individuals with lower income levels (13). The majority of the studies have emphasized that women's access to health services is much lower than men and the use of health services varies according to economic inadequacy, lack of health insurance and cultural characteristics (8, 28-30). There is also a close correlation between unmet needs and quality of life (31, 32). Edib et al. stated that unmet needs had an influence on the poor quality of life (33). Compatible with the literature data, unmet health needs for individuals in the vulnerable group also indicates the presence of inequality in the health system. It is important to develop programs or plans for the health needs of people in the risk group during the present and the following pandemic periods.

The most commonly reported unmet health needs during the pandemic have been observed to be in the following areas: oral and dental treatment, eye health and treatment for vision disorders, early diagnosis and annual health screening, health care for mental and psychiatric problems, and follow-up and monitoring of chronic diseases. These unmet health needs may have occurred due to the maintenance of health care services to serve only emergency patients during the pandemic, except for the diagnosis and treatment of COVID-19, in Turkey and calling the society not to use health care services other than emergency health needs. It is remarkable that oral mucosa and eye complaints, which are the firstly-reported transmission route of COVID-19, are the most delayed health needs. Similarly, there are studies reporting that the necessary treatment regimen should be maintained (11) and there has been a great decline in dental care (11), vaccination, screening and mental health services (34-36). In the guidelines published by the World Health Organization to help countries maintain essential health services during the COVID-19 pandemic, it was reported that countries should identify essential services that will be prioritized in their efforts to maintain continuity of service delivery (21). The choice of priorities may vary depending on the health system and local disease burden; however, it is recommended to be made by primarily considering the prevention of infectious diseases, maternal and child morbidity and mortality, and acute exacerbations of chronic conditions by maintaining ongoing treatment regimens, and management of emergencies requiring intervention. Efforts of primary health care institutions in Turkey have had a significant effect in meeting health needs related to primary health care services during this period. Furthermore, the recruitment of an additional 44,000 health care personnel in 2020 has strengthened the health system's capacity to respond to the national crisis (37).

During the pandemic, people may delay or avoid receiving health service for many reasons. In the present study, the most common reason for unmet health needs was observed to be the fear of catching the virus from health care personnel or hospital, followed by the closure of health care institutions due to the pandemic or being unable to reach a specialist (physician/dentist) and thought of not wanting to create a burden on the health system that is extremely busy with the management of COVID-19-positive patients. Although it is a known fact that timely access to health services is essential for optimum physical, mental, and social health, it is clear that such measures as transforming many hospitals into pandemic hospitals during the pandemic process, suspending outpatient clinic examinations, limiting face-to-face examinations, and calling people not to go to hospitals unless there is an emergency are structural barriers to meeting the health needs of the society (7). Similarly, in other studies, the main barriers to health services during the pandemic period have been listed as fear of being infected with COVID-19, lack of services, job and health insurance losses, and difficulties in transportation and looking after children at home (8-12). Furthermore, losing trust in health care institutions and fear have caused communities to deliberately and widely avoid the health system, leading to significant reductions in the use of health facilities. This has been reported in the social impacts of the 2014–2015 Ebola outbreak in West Africa. In the long term, the pandemic has led to the loss of trust, relations between communities and health system, and fear of health care workers, and health care facilities were considered 'plague centres' (20). As the the number of Ebola cases declined, the necessity to address its long-term societal impacts has emerged dramatically.

Considering solutions to unmet health needs, several participants included in the present study stated that they did nothing, while others stated that they used herbal or alternative medicine methods or used medicines available at home. This situation may cause a delay in early diagnosis, intervention, and urgent care and treatment in adults. Au highlighted that accessibility of health care services had become the greatest service gap in the COVID-19 outbreak (38). Management of the non-COVID-19-related health needs of the society by a national telemedicine center to be established during the pandemic or establishment of clinics for unmet health needs is thought to be able to eliminate this gap. In Turkey, there is also an increasing demand for live remote consultations, particularly in private health care institutions. Despite many efforts in this area, there is no regulation regarding the functioning of health services that can be provided via telemedicine (39).

According to the World Health Organization, well-organized and prepared health systems can continue to provide

equitable access to essential service delivery throughout an emergency, limit direct mortality and avoid increased indirect mortality (21). It has been further reported that health systems with a relatively limited COVID-19 caseload should have the capacity to maintain routine service delivery in addition to managing COVID-19 cases. Therefore, measuring the access level of countries to the health services needed by society during the pandemic period is of great importance in terms of policymaking for identifying and solving existing problems (19, 21, 22). Although the health system in Turkey has fought successfully against the COVID-19 pandemic, considering the social impacts of the disease may reduce the negative long-term economic and social effects of the disease.

5. CONCLUSION

It is inevitable that people will be both physiologically and psychosocially affected by serious public health measures taken to control the COVID-19 pandemic. There are many lessons to be learned for the future from the results of the present study, which has clearly demonstrated the impact of the pandemic on the health needs of the adult age group living in Turkey. The results showed that two out of every three adults participating in the study had unmet health needs during the pandemic, particularly for oral and dental treatment, eye health and treatment for vision disorders, early diagnosis and annual health screening, mental and psychiatric disorders, and follow-up and monitoring of chronic diseases. The primary barriers to meeting health needs have been observed to be fear of being infected with the virus, being unable to access health services, and not wanting to create a burden on the health system. As a solution to unmet health needs, participants mostly reported that they did nothing in this regard while some of them stated that they used herbal or alternative medicine methods or used medicines available at home. Socio-demographic determinants for unmet health needs of the adult age group have been found to be as follows: female gender, low economic status, having general health insurance or not having any health insurance, presence of chronic disease, perceiving one's health as poor or unchanged, and poor quality of life. The broader social and socio-economic impacts of unmet health needs, which are an indirect consequence of the pandemic, are likely to affect society. Nevertheless, mortality and morbidity rates reflecting the direct impact of the pandemic are only the tip of the iceberg; the majority of pandemic's impact can be thought of as hidden beneath the surface. We believe that health needs and related factors need to be considered to limit the social and economic consequences of unmet health needs in society before they further deepen and it will be useful to make periodic strategic plans for the rational use of resources.

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