The Impact of the COVID-19 Pandemic on the Unmet Healthcare Needs in People Aged Over 50 in Portugal

COVID-19 e Necessidades em Saúde Não Satisfeitas para Indivíduos Com Mais de 50 anos em Portugal

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ABSTRACT
Introduction: The COVID-19 pandemic led to the cancellation of healthcare appointments and to lower demand, which generated unmet healthcare needs. The aim of this study was to evaluate their prevalence and distribution in Portugal.
Material and Methods: Data came from the 'Survey of Health, Ageing and Retirement in Europe'. Between June and August 2020, 1118 Portuguese individuals aged 50 or over were inquired about unmet healthcare needs due to: i) fear of getting infected; ii) cancellation by the doctor/healthcare services; iii) unsuccessful consultation request. The analysis of the prevalence of unmet needs was complemented by the calculation of the concentration indices as a function of the variables: income, education and health status.
Results: About 60% of respondents reported at least one unmet need, which was almost twice the European average. Motive ii) cancellation by the doctor/healthcare services was the most frequent. The prevalence of unmet needs differed depending on income level and health status. The indices evidence the concentration of unmet needs in individuals with the worst health status, although for the reason fear of infection the concentration occurred in those with higher levels of income and education.
Conclusion: Our study showed a high prevalence of unmet needs and their concentration in individuals with worse health status. Given the association between unmet needs and the subsequent deterioration of health, these results should raise concerns about the near future.
Keywords: COVID-19; Health Care Quality, Access, and Evaluation; Needs Assessment; Socioeconomic Inequalities

RESUMO
Introdução: A pandemia por COVID-19 conduziu ao cancelamento de cuidados de saúde e à diminuição da sua procura resultando em necessidades de cuidados de saúde não satisfeitas. O objetivo deste trabalho foi avaliar a sua prevalência e distribuição, em Portugal.
Material e Métodos: Os dados provêm do *Survey of Health, Ageing and Retirement in Europe*. Foram inquiridos 1118 portugueses com 50 ou mais anos, entre junho e agosto de 2020, sobre necessidades de cuidados de saúde não satisfeitas por: i) receio de ser infetado; ii) cancelamento por parte dos serviços de saúde; iii) solicitação de consulta não atendida. A análise de prevalência de necessidades não satisfeitas foi complementada pelo cálculo de índices de concentração em função das variáveis: rendimento, educação e estado de saúde.
Resultados: Cerca de 60% dos inquiridos reportaram pelo menos uma necessidade não satisfeita, quase o dobro da média europeia, sendo o motivo ii) cancelamento por parte dos serviços de saúde o mais frequente. A prevalência de necessidades não satisfeitas diferiu consoante o nível de rendimento e o estado de saúde. Os índices comprovaram a sua concentração nos indivíduos com pior estado de saúde, embora para o motivo Receio a concentração ocorresse nos que têm maior rendimento e nível de educação.
Conclusão: O nosso estudo revelou uma elevada prevalência de necessidades de cuidados de saúde não satisfeitas e a sua concentração em indivíduos com pior estado de saúde. Dada a associação entre necessidades não satisfeitas e a subsequente deterioração da saúde, estes resultados constituem um alerta para o futuro próximo.
Palavras-chave: COVID-19; Determinação de Necessidades de Cuidados de Saúde; Factores Socioeconómicos; Qualidade, Acesso e Avaliação da Assistência à Saúde

INTRODUCTION

New healthcare needs emerged with the presence of COVID-19 in Portugal, in March 2020, and resources were mobilised by the National Health Service – *Serviço Nacional de Saúde* (SNS) aimed at the treatment of these new patients and also at the promotion and development of different actions to fight the pandemic. Contingency measures were also adopted, including withdrawal of non-urgent healthcare activities from 16 March 2020 onwards (Order not published in the Official Gazette). A significant drop in the number of consultations in primary healthcare (PHC) and in hospitals, as well as in the number of surgeries and an increase in waiting times for all these types of healthcare were shown by data obtained from the Transparency website of the Portuguese healthcare system (SNS)[1] and the report of the *Tribunal de Contas* (Court of Auditors).[2] Data from the SNS Transparency website[1] also showed that, compared to homologous periods in 2019: i) the number of attendances in hospital emergency rooms fell sharply in 2020 - for example, a 37.5% drop in March and around 34% in June; ii) a 15.8% drop in hospital consultations has been found from March to July 2020, corresponding to 784,810 less consultations; iii) a 25% drop in the number of

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elective surgical episodes (including conventional and ambulatory surgery) between March and July 2020 (321,000 less episodes); iv) a 53% reduction in face-to-face medical appointments (including home visits) in PHC (4.5 million less consultations) between March and July 2020. In contrast, non-face-to-face consultations in PHC have doubled (3.8 million more consultations) and a 36% increase has been found in telemedicine hospital consultations (22 thousand more consultations) within the same period. On the other hand, the median waiting time has increased from December 2019 to May 2020, both for first hospital consultation and for surgery.[2]

Despite the use of non-face-to-face consultations[1], minimising the decrease in face-to-face healthcare activity, it is a reasonable assumption that the decrease in SNS healthcare activity reflects not only the scarcity of resources to address all the needs whether or not related to the pandemic, but also a reaction on the demand side. The need to use personal protective equipment and people's fear of being infected during a visit to the doctor, as well as longer waiting times and movement restrictions in March and April 2020, may have explained the postponement of healthcare demand.[2]

The decrease in healthcare activity throughout the first half of 2020 reflects the increased constraints in the access to healthcare. The quantification of self-reported unmet healthcare needs (UHN) is presented as a measure to assess access to healthcare. UHN are defined as the difference between healthcare deemed necessary to deal appropriately with specific health problems and healthcare actually received.[3] Despite the subjectivity inherent to any indicator based on self-reported information and therefore influenced by individual characteristics (expectations and attitudes towards health and healthcare), UHN have been widely used to assess access to healthcare.[4]

The concern with UHN stems from the effect these may have on the deterioration of individuals' health status - previous studies suggest that the presence of UHN today leads to poorer health in the future,[5-7] with the aggravating factor that their potential concentration in more disadvantaged groups leads to an increase in health inequalities.[8] High levels of UHN during the pandemic may have been associated with increased morbidity and mortality in the future, particularly among people with chronic diseases[9] and the elderly.[10] Delayed diagnosis and postponement in the provision of healthcare may already be responsible for more deaths. The excess mortality that occurred in Portugal between 1 March and 22 April 2020 may have been 3.5 to 5 times higher than what could have been explained by the officially reported COVID-19 deaths, which in addition to the possibility of non-reported death by COVID-19, may have resulted from constraints in access to healthcare.[11]

Similar to health status, exposure to UHN is affected by individuals' living and working conditions, generally higher in women[12-14] and in the chronically ill.[15,16] Income is an important predictor of UHN, both at the European level[13,15,17] and in Portugal,[12] with the risk of UHN being higher among

lower-income individuals. The evidence on inequalities in the distribution of UHN suggests a concentration of these among the poorest, with Portugal appearing as one of the countries with the greatest inequality, particularly regarding UHN related to excessive waiting times.[18]

On the other hand, women are more exposed to the risk of being infected with the new coronavirus as they represent more than three quarters of healthcare professionals and caregivers of vulnerable populations in Portugal, including the elderly and disabled,[19] but also because they represent most of the elderly population (59.8% of the population aged 70 or over and 64.1% of the population aged 80 or over, in 2019).[20] In addition, shutdown or reduced activity in schools, nurseries and other social facilities reinforces the need to support children and dependent persons, a role traditionally performed by women, reducing the time available to seek healthcare, one of the usual causes of UHN surveyed by Eurostat.[21]

Those who are ill are particularly vulnerable during a pandemic. The reduction in all social contacts, including with healthcare providers, is enhanced by higher propensity for the development of severe forms of COVID-19 and the high mortality rate among those with chronic diseases, including respiratory, cardiovascular and kidney disorders, diabetes and cancer.[22,23] As the presence of comorbidities is already associated with higher UHN,[12] the pandemic context may have aggravated this situation, eventually causing more morbidity and mortality in this group.

In short, UHN were related to the conditions underlying a pandemic context and, in some cases, these have reinforced the vulnerability of those who are traditionally more likely to report UHN, including the poorest, women or the sickest. This paper is aimed at assessing the prevalence of UHN in Portugal during the pandemic, either related to demand behaviours or to the inability of the healthcare system to respond. The determinants of UHN will be particularly analysed, focused on gender, age group, income and health status variables. In addition to prevalence, inequalities in the distribution of UHN will also be analysed.

MATERIAL AND METHODS
Data and variables

This study was based on data from the Survey of Health, Ageing and Retirement in Europe (SHARE), which was aimed at people aged 50 and over who were regularly living in a SHARE country at the time of the interview (27 countries of the European Union, Switzerland and Israel).[24] There are currently eight waves, the first from 2004 and the most recent from 2020. The database contains information on the demographic, economic, family structure, social relations, health and healthcare dimensions of individuals and their households. Although there are differences between countries, stratified multi-stage random sampling was the most frequently used sampling methodology.[25] Thus, sampling follows a random scheme in the selection of individuals, and there are no exclusion criteria.

Although different individual participation rates were

found in different countries, overall participation rates consistently above 45% were found in all waves.[25]

We used data collected from the SHARE COVID-19 survey,[26] developed specifically to collect microdata reflecting the context of life after the onset of the COVID-19 pandemic crisis, asking respondents about the following dimensions: health and behaviours, mental health, SARS-CoV-2 infection and healthcare. Data were collected through telephone interview conducted between June and August 2020, with the total sample containing about 57 000 individuals living in 27 countries of the European Union.[27] Given the objectives of the article, we used the SHARE COVID-19 data for Portugal. The interviews were conducted between 11 June and 10 August 2020 to 1118 individuals aged 50 or older.[27]

The questionnaire has three questions that allow obtaining indicators of UHN: 1) "Since the beginning of the epidemic, have you dropped out of any health care because you were afraid of becoming infected by coronavirus?"; 2) "Have you had any appointment scheduled, which the doctor or healthcare facility decided to postpone due to the coronavirus?"; 3) "Since the beginning of the coronavirus epidemic, did you request any appointment that was denied?" Each of these questions reflects UHN from different sources. The first one generates UHN that stems from individual behaviour and will depend on different factors, including the individual's risk-taking behaviour. The second question generates UHN induced by the healthcare system and is independent from the individual's decision. Finally, the third issue generates UHN that combine a bit of both realities. On the one hand, the system shows some supply shortages and an inability to meet patients' needs and, on the other hand, the individual does not show enough resilience to look for alternatives, whether due to economic or other reasons.

Respondents were asked about the type of medical care or treatment whose need was not met, as regards each of the UHN categories identified, including five response alternatives: 1) Consultation with a general practitioner, 2) Consultation with a physician of a hospital specialty, including dentistry, 3) Planned healthcare, including surgery, 4) Physiotherapy, psychotherapy, rehabilitation; 5) Others. The variables used to measure UHN are shown in Table 1.

Information on respondents' age, gender, health status, and household income are also included in SHARE COVID-19 database. These last two variables refer to the pre-pandemic period. The equivalent individual income was based on the information on the household composition and on the modified OECD scale. As regards the level of education, since it is not included in the SHARE COVID-19 database, the longitudinal nature of the SHARE project was used to obtain this variable from the last wave in which respondents were interviewed. For the 50+ population, the level of education remains unchanged through time, so the time lag between both sources does not jeopardize any data consistency. The number of chronic diseases found in the last wave in which respondents were interviewed was used for the identification of respondents with multimorbidity - defined as the presence of two or more chronic diseases,[28] while any additional chronic disease has been obtained from the number of chronic diseases from the SHARE COVID-19 database, that have appeared since the last interview. From the sum of the number of chronic diseases it was then possible to identify the individuals with multimorbidity.

As regards ethical issues, this study was based on data from the SHARE project, and no new information was collected by the authors of this article. As these data were collected by an independent party within the SHARE project,

Table 1 – Definition of the variables for measuring unmet needs

Designation	Description
UHN – Global	= 1, when respondents had UHN from the beginning of the pandemic, = 0, otherwise
UHN – Fear	= 1, when respondents dropped out from any healthcare for fear of being infected by the coronavirus, = 0, otherwise
UHN – System	= 1, when respondents had any medical appointment postponed due to the pandemic, = 0 otherwise
UHN – Shortage	= 1, when respondents sought for any health care and was denied, = 0, otherwise
Type of healthcare with UHN, for *i* = Fear, System, Shortage	
UHN-*i*-Family Medicine	= 1, when UHN-*i* regarded consultations with a GP (general practitioner), = 0, otherwise
UHN-*i*-Hosp. Spec.	= 1, when UHN-*i* regarded consultations with hospital consultants, including dentistry, = 0, otherwise
UHN-*i*-Planned healthcare	= 1, when UHN-*i* regarded any planned treatment, including surgery, = 0, otherwise
UHN-*i*-Physio, Psycho, Rehab	= 1, when UHN-*i* regarded physiotherapy, psychotherapy or rehabilitation, = 0, otherwise
UHN-*i*-Other healthcare	= 1, when UHN-*i* regarded any other type of healthcare, = 0, otherwise

loaned for research and approved by the Ethics Committee of the Max Planck Society, an approval by any national ethics board was not required.

Statistical analysis

The global prevalence of UHN was estimated, as well as a function of several variables reflecting the socioeconomic status and health status of respondents. Hypothesis tests were used to assess the equality of the prevalence of UHN between two groups expressed by a binary variable, for comparison of ratios for large samples.[29] The hypothesis of independence between the two variables using Pearson's chi-square test was used to compare the prevalence of UHN between three or more groups, expressed by a nominal variable.[29]

Concentration indices (CI) were obtained as an objective indicator of the magnitude and direction of inequality in the distribution of UHN as a function of socioeconomic and health status variables (Table 2).[30,31] As the variables used to measure UHN are binary, our estimates of the UHN concentration index are based on the corrections independently suggested by Wagstaff[32] and Erreygers.[33] Both indices have a value within [-1, 1]. Positive values correspond to higher UHN concentration in favour of the better-off (more health, higher education or higher income), and negative values correspond to the opposite. The estimation of the corrected concentration indices and standard errors is obtained from the STATA v16.0 software, specifically with the conindex command.[34] Given the sampling methodology followed in the SHARE project, the probability of finding a given individual in the sample differs from the probability of observing that same individual in the population.[25] Considering these circumstances, sample weights are required: 1) to ensure the representativeness of the sample for the intended target population; 2) to obtain unbiased estimates for prevalence and concentration ratios, as well as to obtain correct estimates of standard errors.[35,36] Therefore, the calibrated individual weights present in the SHARE COVID-19 database were used.[25] In all statistical analyses, the confidence level was set at 99%, and the data management and statistical analysis process was developed using STATA v16.0.

RESULTS

An average age of 68 has been found in our group of respondents (44.0% male); 67.0% had completed primary school, 24.0% had completed secondary education and the remaining 8.8% had higher education qualifications; fair or poor health status was perceived by 58.4% of the respondents and 71% presented with two or more chronic diseases. Since the emergence of the pandemic, 13.9% have described an impairment in their health status and 1.3% an improvement.

The prevalence of UHN in Portugal is shown in Table 3, when compared to 26 European Union countries, plus Israel and Switzerland. Considering the overall UHN indicator, a 60% prevalence of UHN has been found in Portugal, compared to 33.0% in the remaining countries. When UHN was analysed considering each of the different reasons, the cancellation of appointments and treatments by doctors in healthcare services was the most frequent reason underlying UHN, both in Portugal and in the other countries (54.5% in Portugal and 24.2% elsewhere). Statistically significant differences were found for all variables, except UHN-Fear.

The prevalence of UHN for each type of healthcare and regarding each of the UHN categories in Portugal that were defined in this study are shown in Table 4. For instance,

Table 2 – Definition of socio-economic variables and health-related variables

Socio-economic and health-related variables	Description
Age	Age groups: 1) ≤ 65 2) > 65 Age ≤ 75 3) > 75
Gender	= 1, (male), = 0, otherwise
Income	Equivalent income, pre-pandemic reference - Categories: 1) 1st tertile (income ≤ €480,00); 2) 2nd tertile 3) 3rd tertile (income > €811,20)
Education	Categories: 1) Up to the first level of primary school 2) Secondary education 3) Higher education
Health status	Self-reported health status - Categories: 1) Excellent 2) Very good 3) Good 4) Fair 5) Poor
Multimorbidity (MM)	= 1, with at least two chronic diseases, = 0, otherwise

among the respondents who have described UHN due to fear of becoming infected (UHN-Fear), 48.8% had presented this UHN regarding the general practitioner and 45.4% regarding the doctor of another hospital specialty.

The highest scores within each of the UHN categories regarded general and family medicine consultations, followed by consultations with other hospital specialties, including dentistry.

The prevalence of UHN regarding demographic (gender and age), socioeconomic (income and education) and health (health status and multimorbidity) variables are shown in Table 5. No statistically significant gender differences were found, except regarding UHN-Fear, in which a higher prevalence rate was found in female respondents. No significant differences were found as regards the age groups.

Considering the different income tertiles, higher UHN were found in respondents in the lowest income group, showing statistically significant differences. However, the highest UHN were found in the higher income group in UHN-Fear category. Higher UHN (UHN-Global) were found in respondents with higher education and also in UHN-System and UHN-Shortage categories; however, no statistically significant differences were found. The highest prevalence rate of UHN-Fear was found in respondents who have completed secondary education at most, showing statistically significant differences.

Higher UHN were found in respondents presenting with poor or fair health status, except regarding UHN-Fear, although showing no statistically significant differences. Higher UHN were also found in respondents with multimorbidity, showing statistically significant differences in UHN-Global and UHN-System variables.

The UHN concentration indices are shown in Table 6.

Wagstaff and Erreyeres corrected concentration indices (CCI) with the same sign, although with different values,

were found for each of the ordination variables considered. Statistically significant, even though low index values of the UHN-Global were found, showing a concentration of UHN among those with poorer health status. However, a higher concentration was found in respondents with higher income, higher education and better health status regarding UHN-Fear. Conversely, UHN tend to concentrate in respondents with lower income, lower education, and poorer health status in UHN-Shortage category, while UHN-System values were more concentrated in respondents with lower income and poorer health status.

DISCUSSION

This study was aimed at assessing the impact of the COVID-19 pandemic in Portugal regarding UHN. The pandemic had a direct and immediate impact on morbidity and mortality[11,22] associated with the coronavirus infection. However, due to containment measures,[37] including shutdown of healthcare activities, a medium and long-term impact on morbidity and mortality may emerge, related to UHN. These effects, even though less visible in an emergency response environment for COVID patients, should not be neglected.[38] This study has shown a high prevalence of UHN by August 2020, mainly due to cancellations by healthcare services. Data from the SNS Transparency website have shown a significant reduction in the activity throughout the first half of 2020 compared to 2019. A higher prevalence of UHN when compared to previous years was expected, even though these are two different approaches (healthcare utilisation data are based on the number of contacts while UHN are based on a binary variable).

Increased UHN has also become more widespread in Europe. Indeed, confinement measures have been adopted across the European continent.[39] Nevertheless, our results show higher rates of UHN in Portugal when compared to the European average - in the case of overall UHN these

Table 3 – Prevalence of unmet needs: Portugal *versus* Europe

Variable	Portugal	Europa (except Portugal)	Statistically significant
UHN - Global	0.598	0.328	Yes
UHN - Fear	0.155	0.117	No
UHN – System	0.545	0.242	Yes
UHN - Shortage	0.084	0.053	Yes

The 26 countries included in "Europe" are: Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Israel, Czech Republic, Poland, Luxembourg, Hungary, Slovenia, Estonia, Croatia, Lithuania, Bulgaria, Cyprus, Finland, Latvia, Malta, Romania and Slovak Republic.

Table 4 – Distribution of the different categories of UHN by type of healthcare (Portugal)

	UHN – Fear	UHN – System	UHN – Shortage
Family Medicine	0.488	0.703	0.729
Other hospital specialties	0.454	0.512	0.337
Planned medical care	0.013	0.029	0.007
Physio, Psycho, Rehab	0.127	0.021	0.000
Other care	0.264	0.068	0.213

The different values in each column do not have to reach a sum of 1, as each respondent may have reported UHN regarding different types of healthcare.

Table 5 – Prevalence of UHN per demographic, socio-economic and health-related variables

Variable	Categories	UHN - Global	UHN - Fear	UHN - System	UHN - Shortage
Gender	Male	0.600	0.093	0.551	0.080
	Female	0.596	0.205	0.541	0.087
	Statistically significant	No	Yes	No	No
Age	Age ≤ 65	0.629	0.141	0.583	0.044
	65 < Age ≤ 75	0.538	0.152	0.499	0.134
	Agee > 75	0.597	0.190	0.514	0.117
	Statistically significant	No	No	No	No
Income	Tertile 1 (≤ €480.00)	0.718	0.139	0.705	0.112
	Tertile 2	0.609	0.181	0.525	0.132
	Tertile 3 (> €811.20)	0.566	0.275	0.489	0.021
	Statistically significant	Yes	Yes	No	No
Education	Primary	0.588	0.132	0.535	0.11
	Secondary	0.655	0.225	0.595	0.041
	Higher	0.672	0.199	0.615	0.048
	Statistically significant	No	Yes	No	No
Health status	Poor or fair	0.652	0.114	0.627	0.091
	≥ Good	0.522	0.213	0.431	0.075
	Statistically significant	Yes	No	Yes	Yes
Multimorbidity (MM)	MM	0.658	0.187	0.605	0.101
	No MM	0.493	0.089	0.435	0.050
	Statistically significant	Yes	No	Yes	No

Table 6 – Corrected concentration indices of unmet needs

	Income		Education		Health status	
	Wag CCI	**Err CCI**	**Wag CCI**	**Err CCI**	**Wag CCI**	**Err CCI**
UHN - Global	-0.056†	-0.052†	0.066†	0.063†	-0.09	-0.09
UHN - Fear	0.139	0.088	0.138	0.074	0.215	0.114
UHN - System	-0.107	-0.105	0.059†	0.058†	-0.133	-0.132
UHN - Shortage	-0.286	-0.092	-0.183	-0.058	-0.154	-0.048

†: Not statistically significantly different from zero estimate (*p*-value > 0.01)

have nearly doubled. Statistically non-significant differences were only found in UHN-Fear. It is worthwhile mentioning, however, that UHN prevalence was already higher in Portugal before the pandemic. Data from SHARE wave six (2015) have shown that 16.3% of the Portuguese population reported an UHN within the past year, compared to 12.0% in other countries. Data from wave seven of the European Social Survey (2014) have shown that UHN were reported by 15.6% of the Portuguese population aged 50 and over, compared to 10.9% in other countries (own calculations). These data have shown that UHN are traditionally higher in Portugal when compared to the European average, even though with a different dimension from what has been found in the present study. In any case, the exercise of comparison with previous studies will always be limited for several reasons. In the COVID context, we have a specific reason for non-fulfilment of needs (fear of being infected).

Appointment cancellations have reached unprecedented levels. The very notion of need is not comparable. Any no-show or cancellation of an appointment requires the presence of an appointment in the first place. The probability of a respondent reporting an unmet need is thus higher in groups where there were more appointments in the first place. The pertinence of assessing UHN in relation to the population in need and not only in relation to the total population has already been recognised.[40] This overview was not possible with the available data. However, it should be added that an appointment represents the clinical validation[3] of a need. Thus, the usual limitation of the analysis of UHN related to individuals' expectations (different propensities to recognise a need) comes mitigated in the SHARE COVID-19 survey.

It is worth considering that UHN that were used in the present study do not only refer to the public sector. In another study on Portugal, 56% of the cancellations and/or postponements of medical appointments and treatments

were in fact related to the private sector.[41] Although with less expression, UHN due to individuals' fear of being infected were also identified. Unawareness and possibly over reporting regarding the fear message[42] may help explain these results.

The higher propensity of women to report UHN, described in literature,[12-14] was only found regarding the fear reason. Thus, despite the conditions that potentially placed them at increased risk of UHN, in this pandemic context, the evidence generated does not allow reaching any conclusion along these lines.

Given the association between UHN and the subsequent deterioration in health,[5-7] the results regarding the higher levels of UHN among individuals with poorer health status, whether measured by self-assessed health status or by the presence/absence of multimorbidity, are worrying in the sense that health inequalities may even get worse. These results were confirmed by negative and statistically significant concentration indices. However, as described above, these could refer to individuals with more appointments in the first place and thus more susceptible to cancellations or no-shows.

As regards the distribution of UHN according to the respondents' income, in the case of UHN due to the healthcare services' inability to respond, these were concentrated among low-income respondents. This is most concerning because the pandemic has disproportionately affected workers with low wages and poorer working conditions, who in turn have less resources to face unemployment and a sudden loss of income.[43] The behaviour of UHN went in the opposite direction, concentrated among individuals with higher income, more education and better health status. These results turn out to be less worrying since these UHN seem to refer to healthier respondents and with better ability to make informed decisions.[44]

The data used in this study were collected up to 10 August 2020, so they do not reflect the possible recovery of healthcare activity in the public and private sector later that year. Regarding the public sector, a special financial incentive scheme for the recovery of healthcare activity not carried out due to the pandemic was approved in July.[45] However, when looking at the SNS Transparency website, a 13% reduction has been found in hospital consultations and 20% in elective surgeries from September to December 2020, compared to the same period in 2019, not so different from what happened between March and July. The measures of confinement and shutdown of non-urgent elective activity of the Portuguese SNS returned in early 2021.[46] According to information available from the website of the XXII Government of the Republic,[47] in July 2021, the accumulated levels of assistance activity of the SNS were in line with those found in 2019. Nevertheless, in early 2022, the President of the Portuguese Medical Association warned about the need to protect the access to healthcare of non-COVID patients.[48] Finally, it is worth mentioning that almost two years have passed and that despite the intermittent recovery of healthcare activity in primary healthcare and hospitals, the consequences of the needs that were not met in time are still uncertain and some could even be irrecoverable.

CONCLUSION

During the first phase of the pandemic (March to August 2020) six out of 10 Portuguese respondents aged 50 and over did not have the healthcare they considered necessary - almost twice as many as in other European countries; 15% did not have the care they think they needed because they were afraid of being infected, and around 55% had their medical appointments or treatments cancelled by the healthcare services.

Medical consultations, in health centres and in hospitals, were the type of healthcare mostly associated with UHN. Gender and age did not seem to be influential factors of UHN, unlike income and health status. A negative association was found between health status and overall UHN, as well as between income and overall UHN. This is worrying because the pandemic disproportionately affected workers with low wages and poorer working conditions, who in turn have fewer resources to cope with situations of unemployment and a sudden loss of income.

These results have given a wake-up call to the fact that current unmet healthcare needs will expectedly lead to further morbidity and mortality among the most disadvantaged, both economically and regarding their health status.

AUTHOR CONTRIBUTION

All authors contributed equally to the study design, data collection, data storage and analysis, review and discussion of results.

HUMAN AND ANIMAL PROTECTION

The authors declare that this project complied with the regulations that were established by the Ethics and Clinical Research Committee, according to the 2013 update of the Helsinki Declaration of the World Medical Association.

DATA CONFIDENTIALITY

The authors declare that they have followed the protocols of their work centre on the publication of patient data.

CONFLICTS OF INTEREST

The authors declare that there were no conflicts of interest in writing this manuscript.

FINANCIAL SUPPORT

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