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# The Consequences of unmet Health Care Needs during the first Wave of the Covid-19 Pandemic on Health

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# The consequences of unmet health care needs during the first wave of the Covid-19 pandemic on health

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## Abstract

The first wave of the covid-19 pandemic led many people to have unmet health care needs, which could have detrimental effects on their health. This paper addresses the question of the effect of unmet needs during the first wave of the pandemic on health outcomes up to one year after. We combine two waves of the SHARE survey collected during the covid-19 pandemic (in June/July 2020 and 2021), as well as two waves collected before the pandemic. Our health outcomes are four dummy variables for having troubles with fatigue, falling, fear of falling and dizziness/faints/blackouts issues. Finally, we use an OLS regression with individual and time fixed effects for our difference-in-difference analysis, as well as a doubly robust estimator to condition the parallel trend assumption on pre-pandemic covariates. We find substantial short-term effects on the probability of having troubles with fatigue and dizziness. We additionally observe that one year later, June/July 2021, having had unmet health care needs in 2020 increased the probability of having troubles for each of the health measures. We particularly find strong effects for general practitioner (GP) and specialist care.

Keywords: COVID-19, Health, Unmet needs, Difference-in-difference

JEL codes: I10, I18, H12, H75

## I. Introduction

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The first wave of the corona outbreak led to substantial unmet care needs (Arnault et al., 2021; Davillas and Jones, 2021; Anderson et al., 2021). There is currently few evidence on the impact of unmet healthcare needs or care restrictions on health. Forgoing care might have detrimental health effects on the medium to long-term (Chen and McGeorge, 2020; De Jong et al., 2020), especially for old age individuals. In this paper, we assess the effect of unmet care needs during the first wave of the Covid-19 pandemic on the health of European old age individuals and its deterioration up to one year after.

Direct evidence suggests that self-reported unmet health care needs increase the probability of declining health later (Dourgnon et al., 2012; Ko, 2016; Gibson et al., 2019) and increasing mortality (Alonso et al., 1997; Zhen et al., 2015). There is also indirect evidence suggesting that health care consumption can result in a better health. Finkelstein et al. (2012) find that access to a health insurance increases healthcare consumption, which then translates into an improvement of health outcomes. Similar results are found by Goldin et al. (2020) who find that an increase in health insurance coverage, due to a randomized outreach study, resulted in a reduced mortality among middle-aged adults. Other papers suggest that improved access to health care, induced by an access to health insurance, at different stage of life has beneficial health effects on the short and long-term (Card et al., 2009; Goodman-Bacon, 2021). Finally, some evidence suggests that waiting times can deteriorate individuals' outcomes (Moscelli et al., 2016; Reichert and Jacobs, 2017). This literature about waiting times is of particular interest for us given that many care treatments or appointments have been postponed during the first wave of the Covid-19 pandemic (Arnault et al., 2020), which can be considered as an increase in the duration of waiting times.

There exists a related literature on the consequences of the Covid-19 pandemic on health outcomes. There are studies exploring the effect of the pressure induced by the pandemic on hospitals on the quality of healthcare delivered by hospitals. Fetzer and Rauh (2022) finds that the pressure on hospitals induced, for non-Covid-19 patients, longer waiting times, more time before having a diagnostic, less people coming to seek care, more time before seeing a specialist for cancer patients, and more time before having a first urgent treatment for cancer. Finally, they find an increase in hospitals' excess mortality. They also document that these results are induced by the increase of Covid-19 admissions and an increased staff absence due to infections. Overall, these results highlight a reduction in the quality of healthcare provided in hospital, and it resulted in more death for non-Covid-19 patients. One should also note that their results related to cancer are line with a more extensive literature on outcomes for cancer patients (Macmillan, 2020; Richards et al., 2020) and patients with cardiovascular diseases (Banerjee et al., 2021).

This paper studies the effect of self-declared unmet health care needs on health outcomes in a pandemic context in Europe. We explore the effect on self-declared unmet needs during the first wave, i.e between March and June/July 2020, of the pandemic on health outcomes in the short-term (in June/July 2020) and one year after (in June/July 2021). Such self-declared unmet needs have been shown to be a 'meaningful measure of barriers to access' (Gibson et al., 2019) and is well suited to capture the reduced access to care induced by the pandemic. We use several waves of the SHARE survey. First, we use the first wave of the SHARE Corona survey, conducted in June and July 2020, that enables us to identify which individuals have had unmet health care needs during the first wave of the pandemic, as well the type of care (GP, specialist, planned care, physiotherapist/psychotherapist/rehabilitation care) it concerns and the motives (because afraid, because medical treatment was postponed, because medical treatment was denied). Second, to explore how health evolved with respect to the initial health trajectory the individual had before the experience of unmet needs, we use the waves 7 and 8 of the regular SHARE survey that were

conducted before the corona outbreak.<sup>1</sup> Finally, we use the second wave of the SHARE Corona survey to obtain health outcomes one year after (June/July 2021). Concerning the health outcomes, we use variables available in all waves we use: having issues with fatigue, the fear of falling, falling down and dizziness/faints/blackouts. The methodology we use is a difference-in-difference in which individuals who have had unmet needs in 2020 are the treated group and those who did not have any unmet needs in 2020 are the control group. We particularly use a two-way fixed effects estimator and a doubly robust estimator to condition the parallel trend assumption on observed characteristics (Sant'Anna and Zhao, 2020; Callaway and Sant'Anna, 2020).

Our results suggest that unmet care needs during the first wave of the pandemic have had substantial detrimental effects on health outcomes. Postponed care particularly increases the probability of health issues in the mid-term, but also on the short-term for some outcomes such as the fear of falling. We also observe that GP care has mainly short-term and mid-term effects on fatigue and dizziness, although specialist care has detrimental effects mid-term effects on all health outcomes. All in these results also suggest that the shortage of health care during the first wave of the pandemic, and unmet health care needs in general, can have long-term effects on medical symptoms, can accelerate the process of frailty for old age individuals as well as their entry into a health state with a loss of autonomy. Our results appear to hold whatever the reasons for unmet needs, except for denied care for which we have obtained unprecise estimates, so whatever the unmet needs are due to supply (because care was postponed) or demand effects (because was afraid to be infected).

The contribution of the paper can be summarized as follows. We contribute to the literature on the consequences of unmet health care needs on health outcomes, and the consequence of the Covid-19 pandemic on individuals' health through the drop of healthcare provision it induced. With respect to the literature about Covid-19, we bring new evidence on the consequences for a deterioration of health care access outside the hospital setting. Our results highlight the importance of maintaining the healthcare system to avoid lasting detrimental consequences for old age individuals. Given the short-term and medium-term effects for individuals who have had unmet needs because they were afraid of being infected, maintaining the trust in the healthcare system is important to avoid a deterioration of old age individuals.

## II. Data

We use the first and second waves of the SHARE Corona survey. These are special surveys conducted by phone for people who previously participated to the Survey of Health, Aging and Retirement in Europe (SHARE) to study the consequences of the coronavirus on the European old age people. SHARE is a multidisciplinary database of micro-data on health, socioeconomic status, and intergenerational transfers on individuals aged 50 or more, and conducted in 25 European countries.<sup>2</sup> The first wave of the Corona survey was collected in June and July 2020, while the second was collected one year later (in June and July 2021). To be able to compare the health of individuals before and after, for both individuals who have had unmet needs during the first wave of the pandemic (treated group thereafter) and those who did not (control group thereafter), we use the waves 7 and 8 of the regular SHARE survey that were conducted before the corona outbreak.<sup>3</sup> These two last surveys were collected from March to October 2017 for the wave 7 and from November 2019 to March 2020 for the wave 8.

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<sup>1</sup> The timeline between the survey is presented in Figure A1, in the appendix.

<sup>2</sup> There are actually 28 countries who participated to the SHARE survey, 25 correspond to the number of countries who participated to the four surveys we use.

<sup>3</sup> We decided to not include previous waves, such as the wave 6 for example, because it reduced a lot the sample size.

The sample is composed of 22,391 individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey in order to avoid bias induced the long run effect of unmet needs (see section 5 for an explanation of this sample selection).<sup>4</sup>

### *Outcomes*

We use different health variables that are available, and with the same wording, in all the different waves we use for the analysis. Our main outcome variables are measured with the following questions:

*For the past six months at least, have you been bothered by any of the following health conditions?  
Please answer yes or no:*

1. *Falling down*
2. *Fear of falling down*
3. *Dizziness, faints or blackouts*
4. *Fatigue*

We therefore have four binary outcomes equal to one if the individual responded “yes” for the given health outcome, and 0 otherwise. One should note that the different variables do not capture the same dimensions of health. The two first variables (falling down and the fear of falling) are determinants of the loss of autonomy and can have long-term impacts on it (Franse et al., 2017), dizziness/faints/blackouts are medical symptoms (Romero-Ortuno and Soraghan, 2015), while the last one (fatigue) capture is a determinant of individuals’ frailty (Fried, 2001). Also, note that later in the paper, we abbreviate “dizziness, faints or blackouts” to “dizziness”.

### *Main variables*

Our main variable of interest is whether the individual has had unmet care needs during the first wave of the pandemic. Three different questions, derived from the first wave of the SHARE Corona survey, can be used. It is first asked to individuals if they forgo some care because they were afraid of being infected by the corona virus.<sup>5</sup> Then it asked if they had an appointment scheduled, which the doctor or medical facility decided to postpone due to the corona virus.<sup>6</sup> Finally, it is asked if they asked for an appointment for a medical treatment since the corona outbreak but did not get one.<sup>7</sup> For this latter, we refer to it as denied care. For each of these three questions, respondents could say “yes” or “no”.

We construct four different variables: one binary variable, equal to one if the individual responded ‘yes’, for each of the three questions to explore the effect of the three different reasons of forgone care, and one binary variable equal to one if the individual responded “yes” to at least one of the three questions. This last variable captures the effect of having at least one forgone medical appointment

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<sup>4</sup> Unmet needs are unfortunately not available in the wave 7 of the regular SHARE survey.

<sup>5</sup> Exact wording is: Since the outbreak of Corona, did you forgo medical treatment because you were afraid to become infected by the corona virus?

<sup>6</sup> Exact wording is: Did you have a medical appointment scheduled, which the doctor or medical facility decided to postpone due to Corona?

<sup>7</sup> Exact wording is: Did you ask for an appointment for a medical treatment since the outbreak of Corona and did not get one?

or treatment in general. For the three first variables, we refer to it later in the paper as the reasons for forgone care.

Table 1: Descriptive statistics for unmet needs

|   | All groups       |        |
|---|------------------|--------|
|   | % of full sample | N      |
| Total sample  | 100              | 22,391 |
| No unmet needs  | 62.2             | 13,935 |
| Unmet needs   | 37.8             | 8,456  |
| <i>By reason</i>  |                  |        |
| Because afraid  | 13.1             | 2,924  |
| Postponed   | 28.5             | 6,375  |
| Denied  | 5.2              | 1,169  |
| <i>GP care</i>  |                  |        |
| All   | 9.7              | 2,175  |
| Because afraid  | 5.1              | 1,140  |
| Postponed   | 4.7              | 1,058  |
| Denied  | 1.4              | 314    |
| <i>Specialist care</i>                                  |                  |        |
| All   | 29.2             | 6,311  |
| Because afraid  | 8.65             | 1,936  |
| Postponed   | 21.9             | 4,924  |
| Denied  | 3.52             | 788    |
| <i>Planned care</i>                                     |                  |        |
| All   | 4.4              | 981    |
| Because afraid  | 1.3              | 287    |
| Postponed   | 3.49             | 782    |
| Denied  | 0.5              | 100    |
| <i>Physiotherapist/Psychologist/Rehabilitation care</i> |                  |        |
| All   | 3.7              | 831    |
| Because afraid  | 1.2              | 266    |
| Postponed   | 2.8              | 615    |
| Denied  | 0.3              | 76     |

Data : SHARE Corona Survey 1.

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey.

To go further into the analysis, for each reason of forgone care (or unmet needs) it is asked to the individuals the type of care it concerns. More precisely, individuals can indicate if they forgo, have been denied or postponed i) GP care, ii) specialist care (including dentist), iii) a planned medical treatment (including surgical operation), iv) physiotherapy/psychotherapy/rehabilitation care or v) another type of medical treatment. To explore the effect of forgone care by type of care that has been forgone, we construct four dummy variables equal to one if the individual declares having forgone care or unmet needs for one type of care, irrespective of the reason, and zero otherwise. Note that we did not construct a variable for the category corresponding to “other care” because it is more

complicated to interpret what it measures given that it contains different types that can be very different.

Descriptive statistics are provided in Table 1. We can see that, in our sample composed of 22,391 individuals (observed during four periods), with 8,456 individuals (i.e 38% of the sample) who have had unmet needs. This shows that there are indeed many individuals who have had unmet needs during the first wave of the pandemic, which is in line with the huge drop in medical treatment during the first wave of the pandemic (Arnault et al., 2021). Another important observation is that, if we look at the different reasons of unmet needs, the first motive is unmet needs because a medical treatment was postponed (29% of the sample), the second is because the individuals were afraid by the coronavirus (13%) and the last one is because the medical treatment or appointment was denied when they tried to have an appointment. Note that the last reason is potentially smaller due to selection, if individuals did not try to have an appointment because they were afraid or because they knew they would not be able to have it, this would make them unable to have a medical appointment denied. Note also that the proportions do not sum to one because individuals could respond they have had unmet needs for different reasons and were not restrained to one choice. If we decompose by type of care, we can see that most unmet needs correspond to GP and specialist care who respectively represent 11% and 30% of the sample. The remaining 13,943 individuals who did not have had unmet needs are the control group we use in all regressions.

## II. Methodology

To explore the effect of unmet needs on health, we use a difference-in-difference methodology with having unmet needs during the first wave of the pandemic as the treatment variable. The control group is composed of individuals who did not have any unmet needs during the first wave of the pandemic. We also allow unmet needs to have a dynamic effect on health up to one year after the first beginning of the pandemic. Note that the treatment occurs at the same time for everyone in the sample since we focus on the effect of having unmet needs during the first wave of the pandemic. Following the recommendations from Roth et al. (2022), we first estimate the two-way fixed effects (TWFE hereafter) regression:

$$y_{it} = \sum_{j=-1}^1 \beta_j D_i + \mu_t + \nu_i + \epsilon_{it} \quad (1)$$

Where  $y_{it}$  is the health variable of the individual  $i$  at time  $t = -2, \dots, T$  with  $T = 1$ . Note that we denote  $t = 0$  the first wave of SHARE Corona survey (i.e June/July 2020), which is the time at which the individuals have just had unmet needs. The dates  $-1$  and  $-2$  respectively represent the wave 7 and wave 8 of the regular SHARE survey, that are conducted before the corona outbreak, and the date  $t = 1$  represent the second wave of SHARE Corona survey. See figure A1 in the appendix for a graphic representation with the dates of each interview. In addition,  $\mu_t$  are time fixed effects,  $\nu_i$  are individual fixed effects (that includes a country fixed effect) and  $\epsilon_{it}$  a time-varying unobserved random term.  $D_i$  is a dummy for whether the individual has had unmet needs during the first wave, and 0 otherwise. Therefore, the coefficients  $\beta_j$  measure the difference in evolution of the health outcomes between the treated and control groups at each date, with respect to their health measured before the corona outbreak (i.e in wave 7 of the regular SHARE survey, also called  $t = -2$ ). Indeed, the coefficient  $\beta_{-2}$  is normalized to 0. One should also note that they measure the average treatment effect on the treated (ATT) that is defined as  $E[y_{1j} - y_{0j} | D = 1]$ , where  $y_{1j}$  ( $y_{0j}$ ) is the outcome at time  $j$  when treated (not treated). Hence, it is the expected difference between the observed outcome of treated individuals with the outcome they would have had if they were not treated.



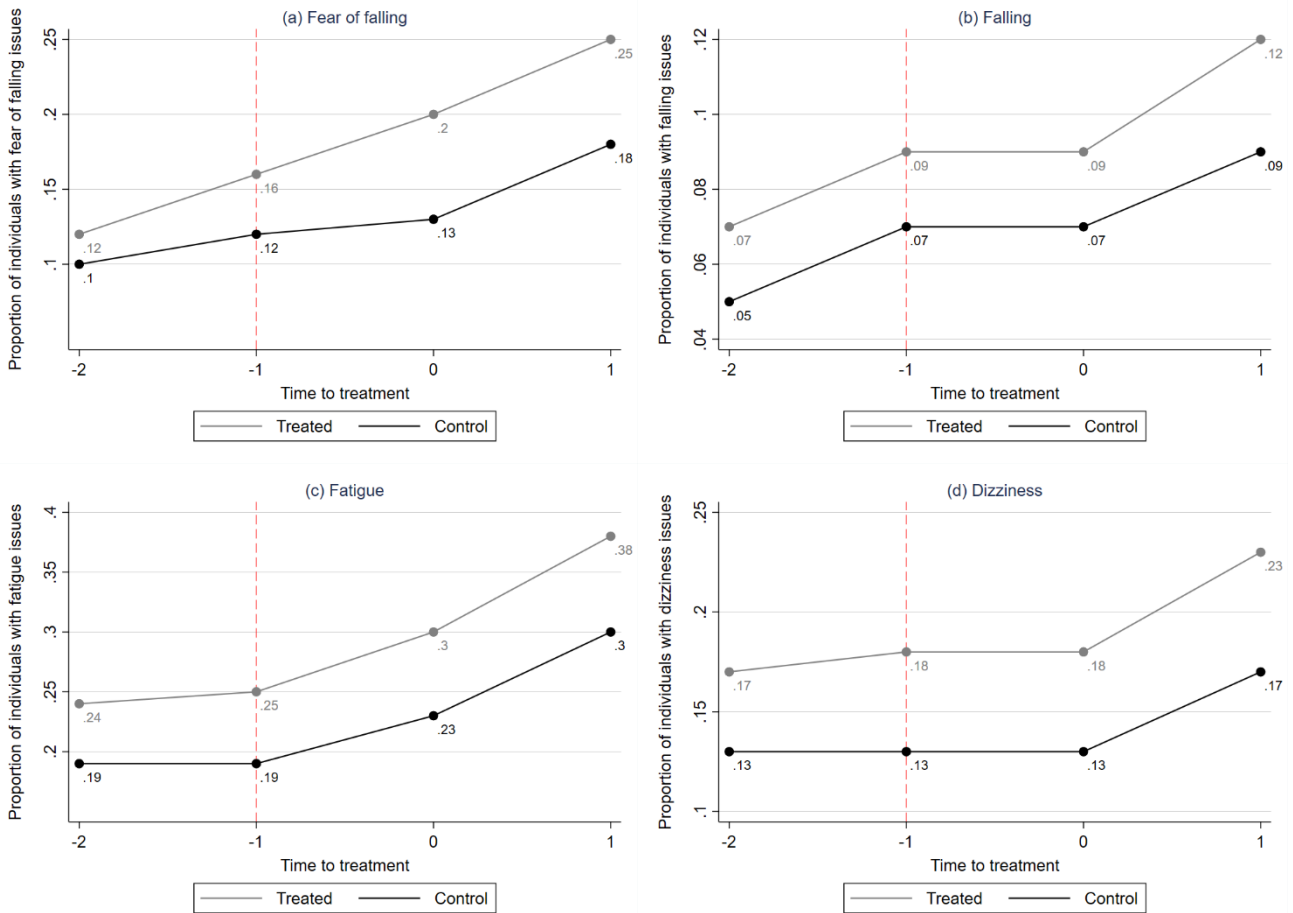
The control group is very important in a difference-in-difference analysis. One important point is when we explore unmet needs for a particular reason or type of care. Indeed, for example, when we estimate the effect of unmet specialist care need, the control can be composed of individuals with unmet needs for other type of care and this would lead to us to underestimate the effect of specialist unmet need. Therefore, we always use individuals with no unmet needs as a control group only, which is composed of 13,943 individuals. Hence, the remaining individuals with no specialist unmet needs are not included.

To identify a causal effect several assumptions must be verified. First, having unmet needs must be an exogenous event, which is unwarranted. Indeed, if the corona outbreak can be considered as an exogenous event that individuals did not anticipate such that they went for a medical treatment before, some selection into treatment is still possible. Indeed, practitioners can have selected individuals to whom they postponed or denied care according to their health status. Such prioritization of the health care system might be such that the control and treated groups are not necessarily comparable. In addition, individuals with a poor health or a higher preference for health are more likely to already have an appointment that has been postponed or to have sought care and being denied. Unfortunately, we do not know in the survey whether individuals have sought care. One way to make to control group and the treated more comparable and reduce these potential biases, we could focus on individuals who have been seeking care during the pandemic of individuals who had an appointment (whether it was postponed or not). Unfortunately, this information is not available. Nevertheless, the introduction of fixed effects partly captures the potential impact of preferences. The mechanisms corresponding to unmet needs because individuals were afraid of being infected are somewhat different and difficult to disentangle. The first mechanism we have in mind is that individuals with a more deteriorated health have more chance to have severe COVID symptoms if they are contaminated. Hence, they would be more likely to renounce to health care. On the other hand, those with a more deteriorated might also have more needs and therefore less likely to forgo health care.

Second, the parallel trend assumption is a key assumption to identify the average treatment effect on the treated (ATT). This assumption states that the average health outcome would have evolved in parallel for the treated and untreated populations if the treatment had not occurred. To test this assumption, we use the two first periods of observation before the pandemic. More specifically, we test whether the coefficient  $\beta_{-1}$  is significantly different from 0. Indeed, if this coefficient is not different from 0, this would mean that, on average, the health outcomes would have evolved in parallel for the treated and untreated populations before the pandemic (i.e before the potential treatment).

To assess the plausibility of the parallel trend assumption, we first provide descriptive statistics on the evolution of the average health outcomes over time for individuals who have had unmet care needs (i.e. the treated population) and those who did not (i.e. the control population) in Figure 1. We have decided to restrict our attention for this descriptive analysis to the more global definition unmet needs, that is whether the individuals have had at least one unmet need, to avoid showing too many graphs. This preliminary analysis shows that the parallel trend assumption might be particularly violated for the fear of falling. We can also see that the treated population had a more deteriorated health than those who did not. This might can be related that individuals with a more deteriorated health were more likely to seek for or need a medical appointment or treatment. For both the treated and untreated, the most prevalent health issues are fatigue and dizziness. The difference between the treated group and the control group, at baseline, is rather small for the fear of falling and for falling with a difference of 4 and 2 percentage points just before the pandemic, respectively.

Figure 1: Evolution of the mean of health outcomes over time for treated and untreated individuals



Note: This graph shows the evolution over time of the proportion of individuals with issues in the treated population (i.e individuals who have had at least one unmet care needs during the first wave of the pandemic) and in the control population (i.e individuals who did not have any unmet care needs). The first wave of the pandemic occurred between time -1 and time 0. The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey.

With respect to the evolution after the first wave of the pandemic, we observe a relatively flat curve between the pre-pandemic survey and the corona survey conducted in June/July 2020 for falling and dizziness. This might come from the fact that the time elapsed between these two surveys is rather short and changes in these conditions can take time. We then observe that health outcomes depreciated faster for those who have had unmet needs, although the difference in evolution is rather small.

Because the parallel trend assumption as specified in equation (1) might not be verified, we use a doubly robust estimator that allows to condition the parallel trend assumption on some pre-treatment covariates (Sant'Anna and Zhao, 2020; Callaway and Sant'Anna, 2021; Roth et al., 2022). This estimator combines two estimation procedures, the inverse probability weighting estimator (Abadie, 2005) and the regression adjustment procedure (Heckman et al, 1997; Heckman et al, 1998). The estimator relies on different assumptions than the previous regression. First, it relaxes the strict parallel trend regression to a conditional parallel trend assumption. Second, it requires a common support assumption.

The estimator proposed by Sant'Anna and Zhao (2020) has been adapted to dynamic treatment effects in Callaway and Sant'Anna (2021), their estimator of the ATT at each date  $t$  is defined as follows:

$$ATT(t) = E \left[ \left( \frac{D_i}{\frac{1}{N} \sum_{j=1}^N D_j} - \frac{\frac{(1 - D_i) \hat{p}(X_i)}{1 - \hat{p}(X_i)}}{\frac{1}{N} \sum_{j=1}^N \frac{(1 - D_j) \hat{p}(X_j)}{1 - \hat{p}(X_j)}} \right) (Y_t - Y_{-2} - \hat{E}(Y_t - Y_{-2} | X, D_i = 0)) \right] \quad (2)$$

Where  $\hat{p}(X_i)$  is the propensity score estimated with a logit model, and  $\hat{E}(Y_t - Y_{-2} | X, D_i = 0)$  is predicted using a linear regression and is the regression adjustment part. The ATTs are estimated with a two-step procedure. First, a linear regression, specified as in equation (1) but with the observed pre-pandemic covariates interacted with the different variables, to predict the expected evolution if not treated for the individuals, and the propensity score is estimated using a logit regression on the pre-pandemic covariates. In the second step, we plug in the estimated propensity score and the predicted outcome evolution when not treated in equation (2). The standard errors from such plug-in estimation method are estimated with a bootstrap procedure with 100 replications. Note that we clustered standard errors at the country level.

Table 2: Descriptive Statistics - Observed characteristics

|                      | All            | Without unmet needs | With unmet needs | Test of difference |
|----------------------|----------------|---------------------|------------------|--------------------|
|                      | (1)            | (2)                 | (3)              |                    |
| Age                  | 69.6<br>(9.07) | 69.6<br>(9.35)      | 69.7<br>(9.59)   | 0.280              |
| Nb specialist visits |                |                     |                  |                    |
| 0                    | 37.9           | 49.9                | 24.6             | 0.000              |
| [1;2]                | 30.9           | 30.3                | 32.0             | 0.001              |
| [3;5]                | 18.8           | 14.9                | 25.0             | 0.000              |
| $\geq 6$             | 12.4           | 8.8                 | 18.4             | 0.000              |
| Nb generalist visits |                |                     |                  |                    |
| 0                    | 15.4           | 18.9                | 9.4              | 0.000              |
| [1;2]                | 32.7           | 33.8                | 30.8             | 0.000              |
| [3;5]                | 30.8           | 28.6                | 34.6             | 0.000              |
| $\geq 6$             | 21.1           | 18.6                | 25.1             | 0.000              |
| Any dentist visit    |                |                     |                  |                    |
| No                   | 44.2           | 49.7                | 35.3             | 0.000              |
| Yes                  | 55.8           | 50.3                | 64.7             | 0.000              |

Data: SHARE, wave 8.

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey.

The covariates we include in this regression are quadratic age, country dummies, number of visits to a GP, number of visits to a specialist, a dummy for at least one visit to a dentist. All these covariates are derived from the wave 8 of the SHARE survey, which is the last survey before treatment occurs. Descriptive statistics of these observed characteristics are presented in Table 2. We particularly see that individuals with unmet needs are about the same age as those who did not. On the contrary, those with unmet needs appear to have a higher healthcare consumption for GPs, specialists, and dentists,

which is also reflected by their more deteriorated health (see Figure 1). This difference justifies that we try to account for the observed difference between the control and treatment group.

We finally make several sample restrictions. As a first sample restriction, we drop individuals who declared unmet needs during the wave 8 for several reasons. First, the questions for unmet needs are very different from those available in the SHARE Corona survey. Indeed, in wave 8, individuals could have unmet needs because they forgo some care for financial reasons or because of it was not available or not easily accessible. Hence, we cannot compare if the effect of unmet needs before the pandemic is the same as for those during the pandemic. Second, the purpose of the paper is to identify the effects of unmet needs during the pandemic, and because these individuals are also susceptible to be more likely to have unmet needs during the pandemic, we would overestimate the consequences of the unmet needs during the pandemic if they were included. Finally, including this sub-sample might induce a violation of the parallel-trends assumption because their health outcomes evolved differently before the pandemic. A second sample restriction we make consists in dropping the few individuals who have had no unmet needs between March and June/July 2020 but who have reported unmet needs (specific to the pandemic) between the two waves of the SHARE Corona Survey (i.e. between June/July 2020 and June/July 2021). We are here interested in specific effect of unmet needs during the first wave of the pandemic, independently of the effect of having unmet needs for the first time after the first wave of the pandemic. Nevertheless, we keep in the study sample, individuals who have had reported unmet needs in both SHARE Corona Surveys, i.e. individuals who have had unmet needs between March and June/July 2020 and unmet needs between the two waves of the SHARE Corona Survey (i.e. between June/July 2020 and June/July 2021).

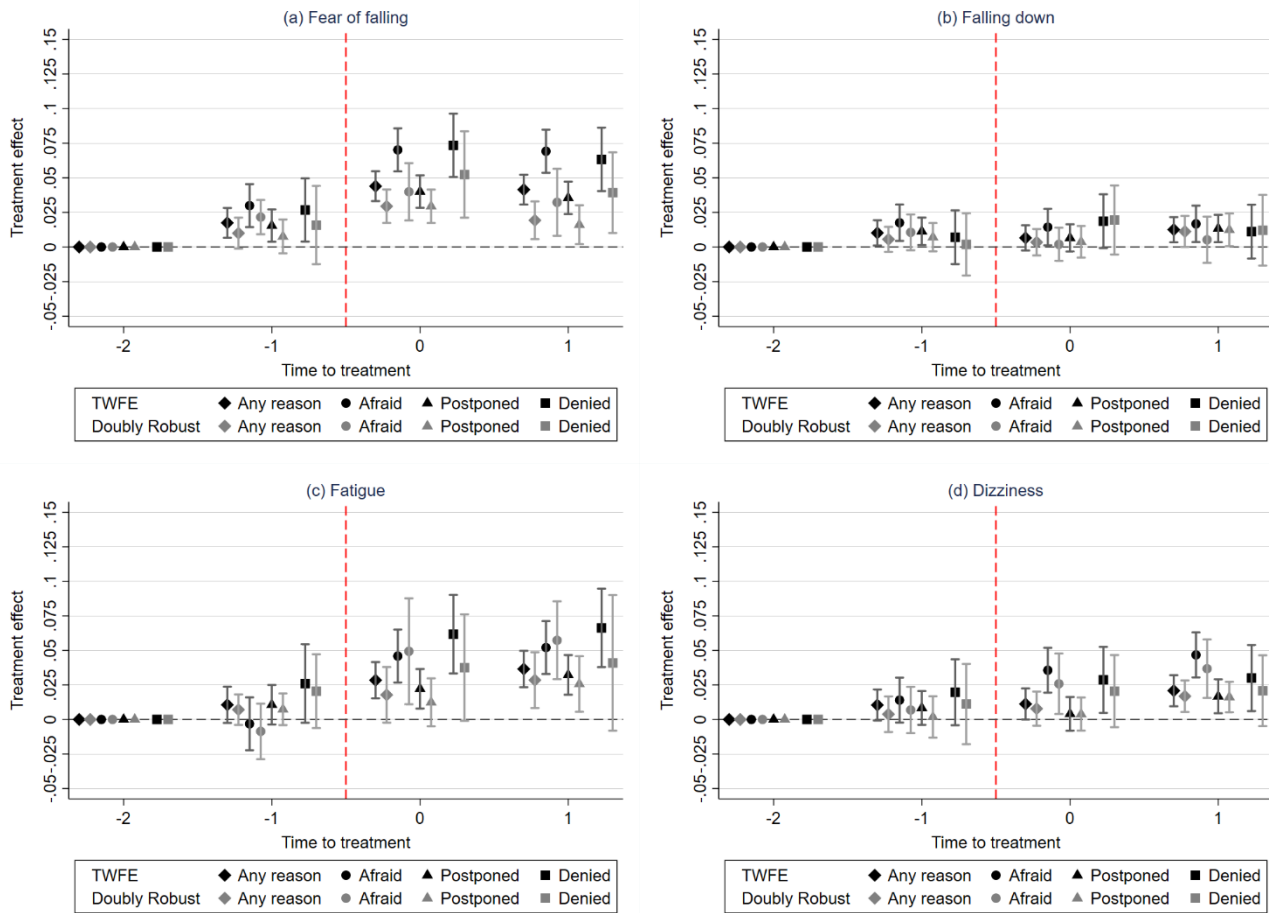
### III. Results

We now present the results from regression analyses that estimate the effect unmet care needs during the first wave of the pandemic on health outcomes. In Figure 2, we display the estimated ATT of unmet needs by reason on the different health outcomes. Estimated coefficients can be found in Table B.1 in the appendix. First, if we look at the coefficients just before the corona outbreak to assess whether the parallel regression is satisfied, we see that it is significantly different from zero most of the time with the TWFE estimator, but not with the doubly robust estimator. This indicates that the parallel trend is more likely to be verified conditional on pre-treatment observed characteristics and we will focus our interpretations on the results from the doubly robust estimator.

For the probability of having a fear of falling, irrespective of the reason of unmet needs, we estimate an increase by 3 and 2 percentage points (ppt) just after the first wave of the pandemic and one year after, respectively. This means that the probability of having a fear of falling for treated observations is, in the short-term, 3 ppt higher than what it would be if they had not been treated. This suggests substantial short-term and lasting mid-term effects of unmet care needs. If we zoom in on the reason for the unmet care needs, we find that the parallel trend is verified only when the reason of unmet needs is because the care appointment or treatment has been postponed and when it was denied, although the point estimate is imprecise for the latter. For postponed care, we estimate a short-term increase by 2.9 ppt and by 1.6 ppt points. For denied care, the increase is by 2.9 and 1.9 ppt in the short and medium term, respectively.

For the probability of falling down, we do not detect any short-term effect that is significant either at the 5% level or the 10% level. One year after, we estimate a 1.2 ppt increase when all the reasons are included, and an increase by 1.1 ppt when the appointment or treatment was postponed. We do detect any significant effect for the other reasons of unmet care needs.

Figure 2: Effect of any unmet needs on health outcomes by reason



Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

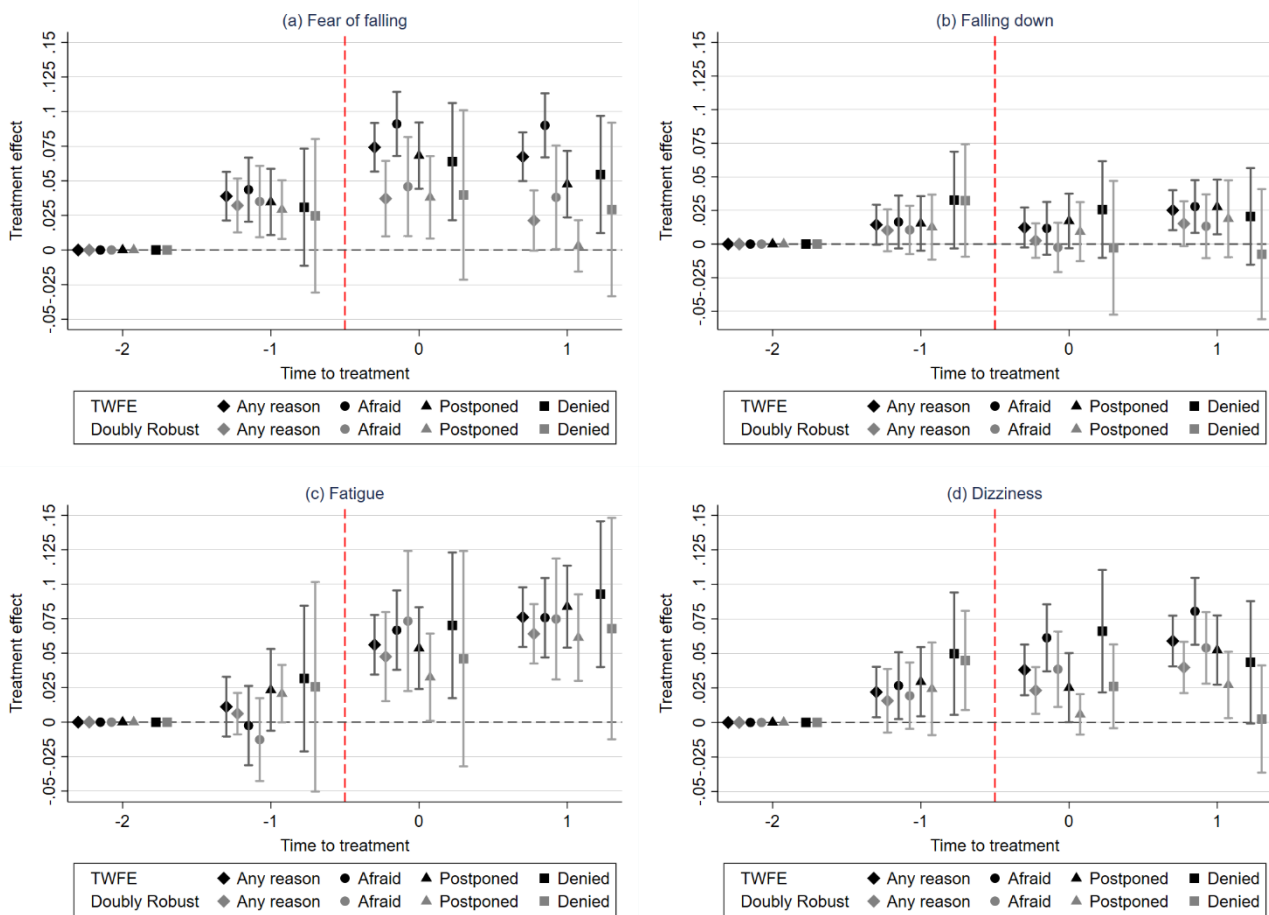
If we look at the probability of having fatigue issues, the parallel trend assumption is verified for all reasons. When combining all reasons, we find an increase by 1.8 and 2.8 ppt in June/July 2020 (significant at the 10% level) and one year after, respectively. When the reason of unmet needs is that the individual has forgotten care because he was afraid of being infected, we find an increase by 4.9 and 5.7 ppt in the short and medium term, respectively. When the reason is because the appointment or treatment was postponed, the short-term increase is not significant, and the one-year effect is positive and suggests an increase by 2.6 ppt. We shall note that the short-term effect for postponed care from the TWFE estimator is significant and large, and the parallel trend assumption seems verified. Overall, these results suggest a lasting and increasing effect on the probability of fatigue issues for these two different latter reasons of unmet care. When care is denied, we observe a significant, at the 10% level, short-term increase by 3.7 ppt.

Concerning the probability of having issues with dizziness, the parallel trend assumption appears to be always verified. We do not detect a significant short-term effect except when the reason of unmet needs is forgone care due to the fear to be infected. Indeed, for this latter reason, we estimate a 1.7 ppt increase in the probability of having issues with dizziness. Nonetheless, we find that significant effects appear one year after the first wave of the pandemic: all reasons combined, we find a 1.7 ppt increase. When the care was unmet due to the fear of being infected, we estimate an increase by 3.7 ppt, whereas the increase is by 1.6 ppt when the treatment or the appointment was postponed. All in

all, these results suggest that unmet care needs during the first wave of the corona pandemic have had substantial and detrimental effects on health outcomes of European old age individuals.

We also investigate the effects by type of care. We present the result for unmet GP care needs in Figure 3. Estimated coefficients are displayed in Table B.2. First, we find that the parallel trend assumption is not verified for the fear of falling, which does not allow us to identify a causal effect. When considering the probability of having issues with falling down, we find a significant (at the 10% level) mid-term effect when all reasons are combined: unmet GP care needs increase the probability of having falling issues by 1.5 ppt. One should note that a significant increase is estimated by the TWFE estimator by about 2.5 ppt for unmet care needs due to fear of being infected or due to care postponement.

Figure 3: Effect of unmet GP care needs on health outcomes



Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.3 for the sample size, the standard errors and the p-values for each coefficient of each regression. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Concerning fatigue, we find very large effects. The probability of having fatigue issues is increased by 4.7 ppt in the short-term and 6.4 ppt on year after when all reasons are combined. When care needs were unmet because the individual was afraid to be infected, it results in an increase by about 7 ppt both in the short and medium term. When care has been postponed, although the parallel trend assumption is almost not verified (the p-value is 0.51), we estimate an increase of about 3.3 ppt and 6.1 ppt in the short and medium term, respectively. This suggests lasting effects that increase over time.

Regarding issues with dizziness, in the short term, we detect a significant increase by 2.3 ppt that is driven by unmet care needs due the fear of being infected (for which the increase is about 3.8 ppt). One year after the first wave of the pandemic, we estimate an overall increase by 4 ppt. When zoom in on the reasons, we find an increase by 5.4 ppt for unmet needs due to the fear of being infected and 2.7 ppt when care was postponed. To summarize, we found substantial effects of unmet GP care needs, especially on fatigue and dizziness, that increased over time, suggesting lasting impact of unmet care needs that can be detrimental in the long-term.

The results for unmet specialist care are presented in Figure 4. When all reasons are combined, we estimate a significant increase in the probability of having issues with the fear of falling by 3.3 ppt and 2.2 ppt in short and medium term, respectively. In short term, we also find an increase by 3.1 ppt when care was postponed and 6.2 ppt when it was denied. Although decreasing one year after, these effects are still significant because we observe an increase by 2.2 ppt and 4.4 ppt, respectively. We do not comment the results for forgone care due to fear of being infected because the parallel trend assumption does not seem verified. With respect to the probability of having fallen, we do not find short-term effects, except when care has been denied because we find an increase by 2.6 ppt (significant at 10% level). One year after, we find an increase by 1.6 ppt when all the reasons are combined and when care was postponed.

Regarding fatigue, once again, we find substantial detrimental effects. Indeed, in short-term, we estimate an increase in the probability of having fatigue issues by 1.9 ppt (significant at the 10% level) and an increase by 2.8 ppt in the mid-term when all reasons are combined. When we examine findings by reasons for the unmet specialist care, the largest effect is found for forgone care due to fear of being infected: the probability of having fatigue issues increased by 5.3 ppt in the short-term and 6 ppt in one year after. When care has been postponed, we do not find a short-term effect but a significant mid-term effect of about 2.6 ppt. Finally, when care was denied, we only find a short-term effect (significant at 10% level) of about 3.7 ppt, although we should be careful when interpreting this latter effect given that the point estimate at time  $-1$  is already relatively high.

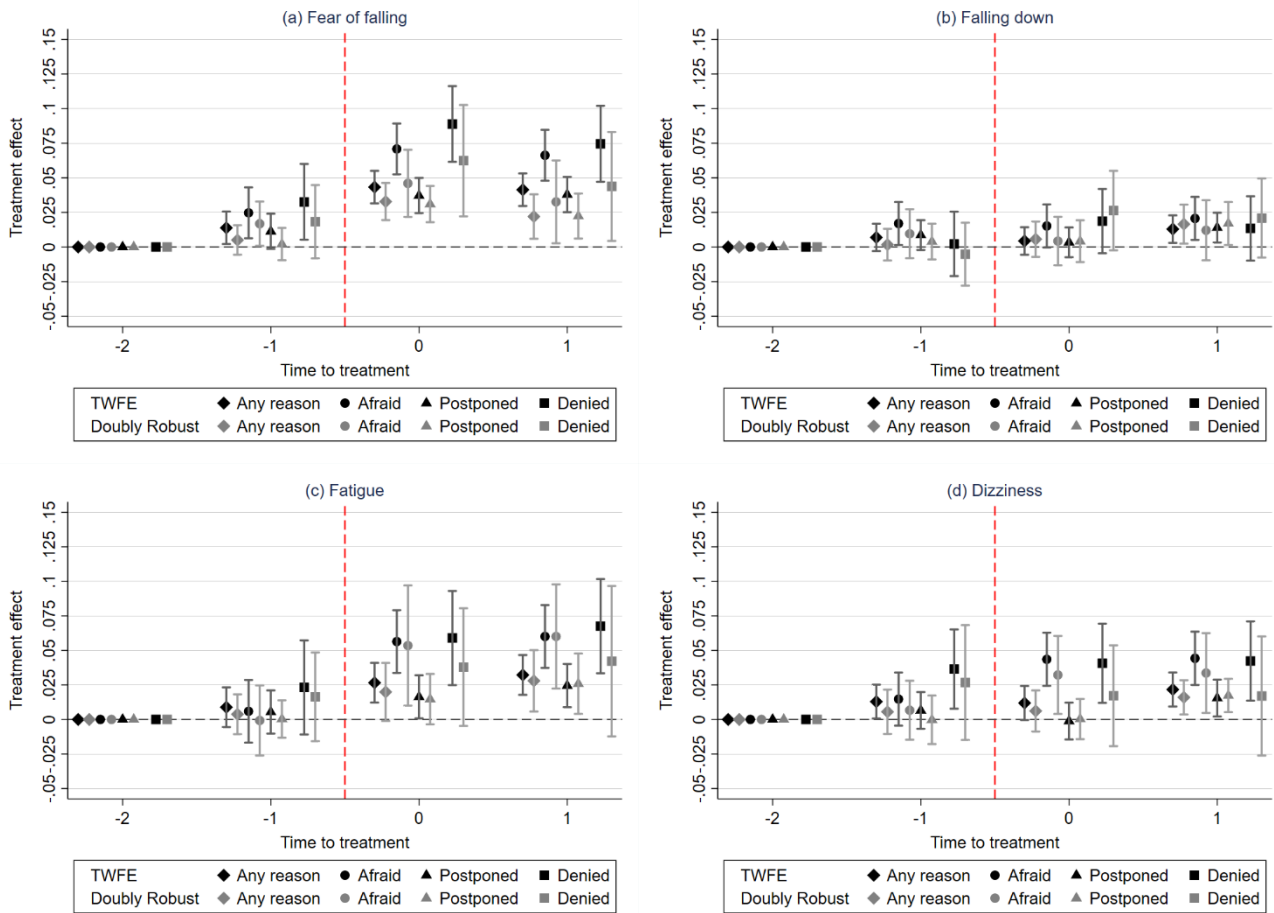
Finally, the effect of specialist unmet care needs on dizziness can be found in panel (d) of Figure 4. When we do not distinguish between the reasons, unmet needs during the first wave is associated to a mid-term increase of about 1.6 ppt, but has no short-term effect. If we look at the estimated effects by reasons, we find the largest effect of unmet needs due to fear of being infected: we find an increase by 3.2 ppt and 3.4 ppt in short-term and mid-term, respectively. When care has been postponed, we find a significant effect of 1.7 ppt one year after, but we find no short-term effects.

For planned care (Figure 5)<sup>8</sup>, the only effect we find is an increase by 2.8 ppt in the short term (significant at the 10% level) and by 4.2 ppt one year later (significant at the 5% level) on the probability of having issues with dizziness, which is quite substantial. We also observe a significant increase for the probability of having a fear of falling, by 19 ppt, although we cast doubt on the interpretation of this estimated ATT because the coefficient for the parallel trend assumption is quite large.

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<sup>8</sup> Notice that we have changed the scale of the vertical axis in Figure 5 and 6 because of the very large interval of confidence.

Figure 4: Effect of unmet specialist care needs on health outcomes

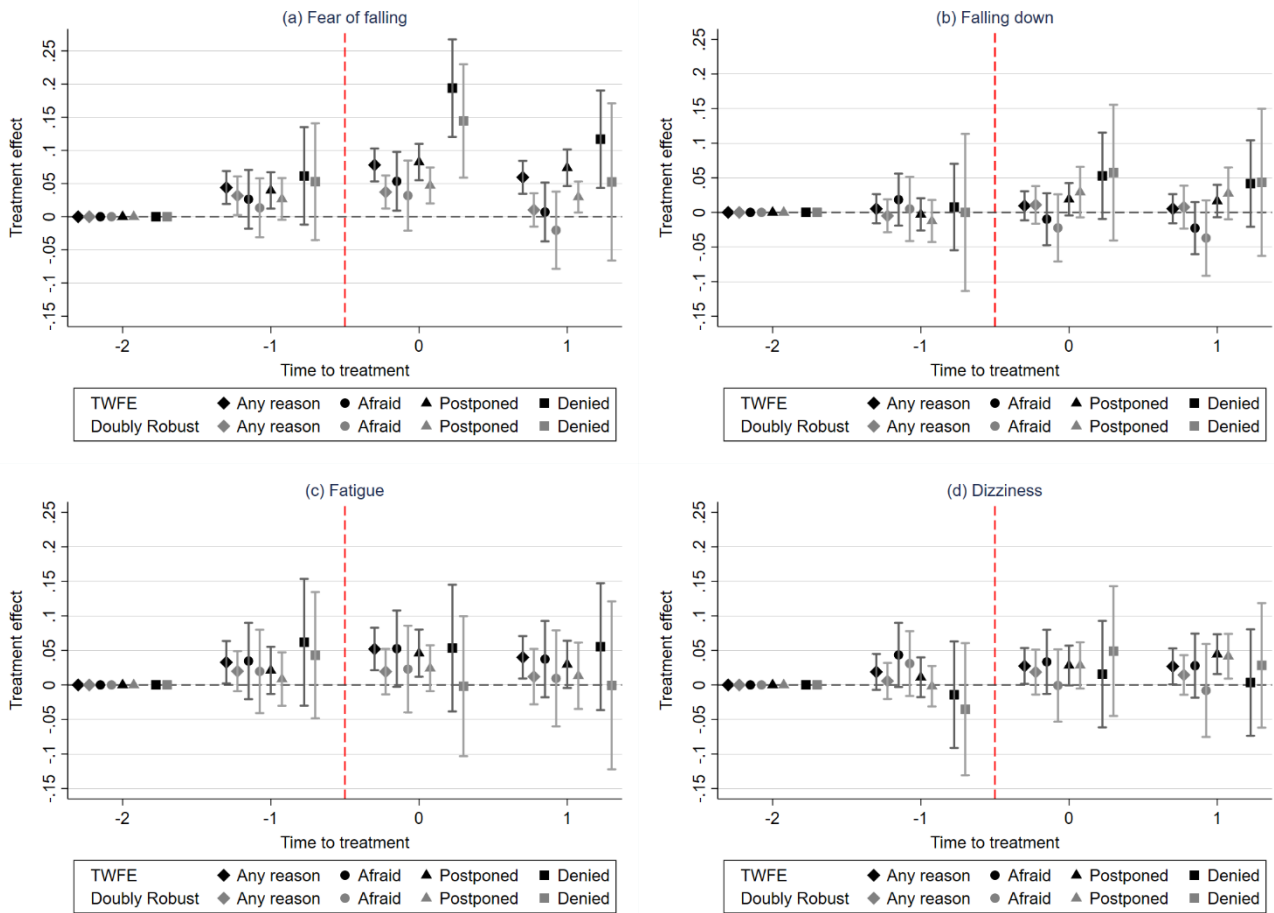


Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.3 for the sample size, the standard errors and the p-values for each coefficient of each regression. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Finally, concerning unmet physiotherapy/psychology/rehabilitation care needs, we observe significant short-term and mid-term effects on the probability of fatigue issues by 4.6 ppt and 5.1 ppt, respectively. The mid-term effect seems driven by postponed care that induced an increase by 5.6 ppt. We also detect a significant (at the 10% level) effect of denied care on the fear of falling. Denied care increases the probability of having a fear of falling by 10 ppt in the short-term.

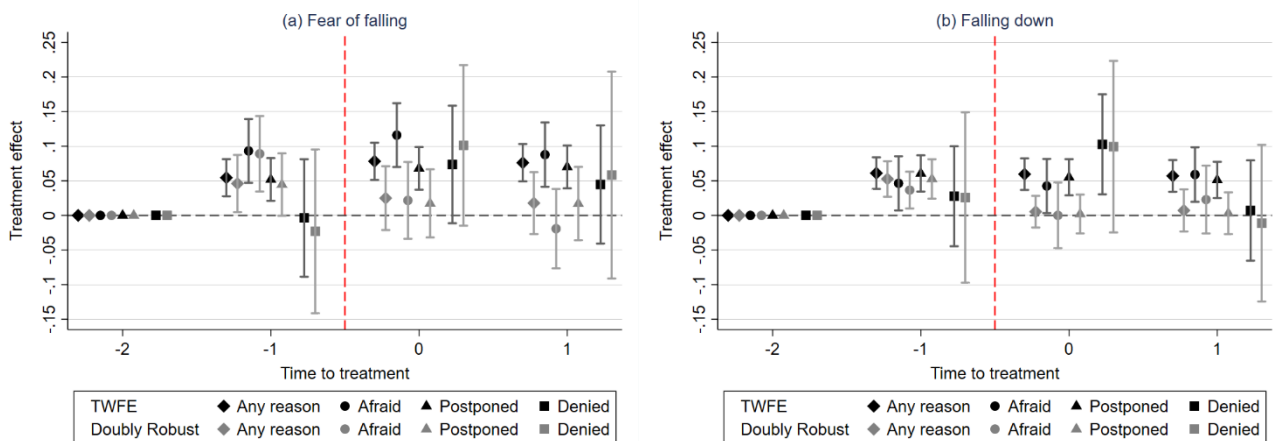


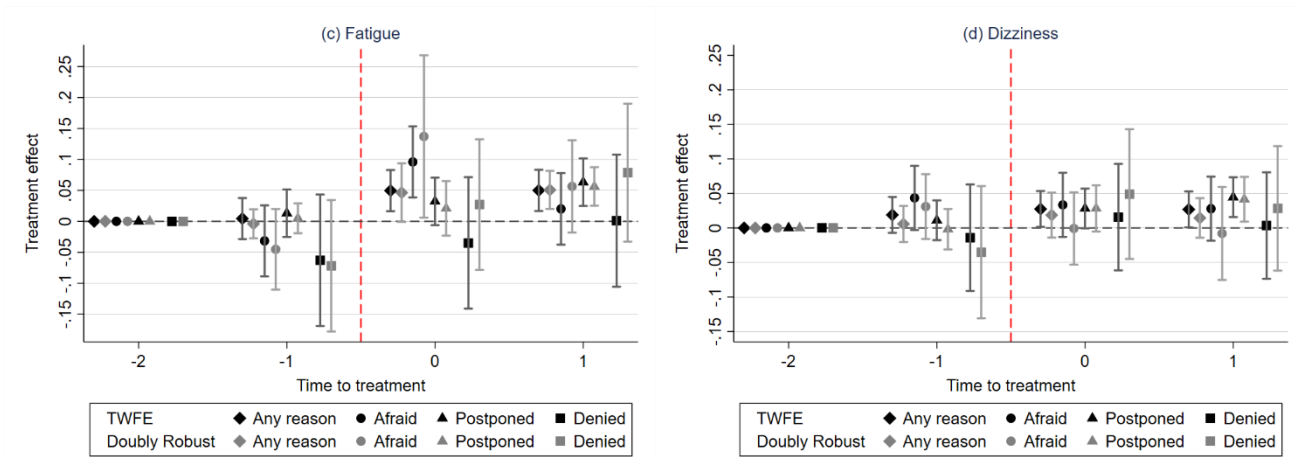
Figure 5: Effect of unmet planned care needs on health outcomes



Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.3 for the sample size, the standard errors and the p-values for each coefficient of each regression. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Figure 6: Effect of unmet physiotherapy/psychology/rehabilitation care needs on health outcomes





Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.3 for the sample size, the standard errors and the p-values for each coefficient of each regression. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

#### IV. Discussion & Conclusion

Our results suggest that unmet care needs during the first wave of the pandemic have had substantial detrimental effects on health outcomes. Postponed care has particularly increased the probability of health issues in the mid-term, but also on the short-term for some outcomes such as the fear of falling. We also observe that GP care mainly has short-term and mid-term effects on fatigue and dizziness, although specialist care has detrimental mid-term effects on all health outcomes. This difference can be explained by either the fact that GP care has been easier to get later, or that specialist care can have particular effects to prevent old age individuals' loss of autonomy. All in all, these results suggest that the first wave of the pandemic, and unmet health care needs in general, can have long-term effects on medical symptoms, accelerating the process of frailty for old age individuals as well as their entry into a health state with a loss of autonomy.

These results are line with direct evidence from Alonso et al. (1997), Dourgnon et al. (2012) and Ko (2016) who finds that having unmet care needs deteriorate future health outcomes, or indirect evidence such as Finkelstein et al. (2012), Goldin et al. (2020) and Card et al. (2009).

Our results appear to hold whatever the reasons for unmet needs, except for denied care for which we have obtained unprecise estimates, so whatever the unmet needs are due to supply (because care was postponed) and demand effects (forgone care due to fear of being infected). Therefore, in a pandemic context during which health systems may mainly focus of the provision of health care for infected patients, it seems important to be able to maintain the provision of health care for other diseases and for all patients. It is also important to maintain the trust in care practitioners' ability to protect their patients from infections to limit deleterious forgone care due to the fear to be infected. More generally, our findings support that reducing access to primary and secondary healthcare could be deleterious and an accelerating factor of the process of frailty for old age individuals. Therefore, health systems should guarantee access to adequate healthcare for all to promote healthy ageing and to limit avoidable health expenses.

This work has several limitations that must be discussed. First, we do not know whether the individuals have sought for care. Therefore, our control group includes might include individuals who did not need care. It would have been more appropriate to be able to compare the evolution of health

outcomes of individuals who have had unmet needs with those who did not, conditional on having sought for care. Unfortunately, this is not possible with our data. Second, as we explained in the methodological section, having unmet health care needs is not necessarily an exogenous event.

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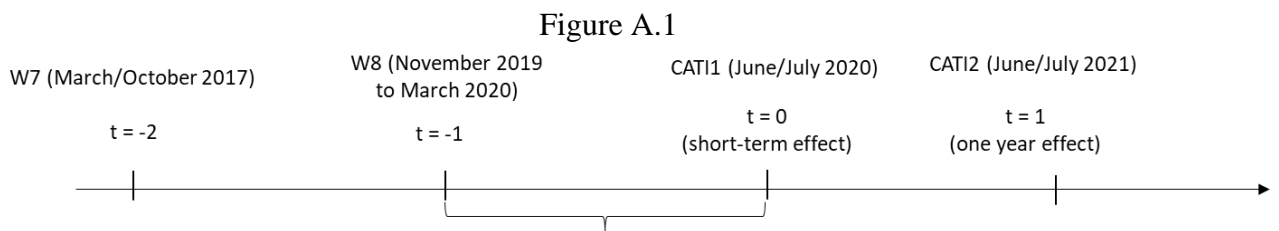
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## Appendix

### Appendix A. Timeline



Note: This Figure display the timeline for our empirical analysis and summarize the different part of the SHARE survey we have used.

## Appendix B: Tables

Table B.1: Effect of having any unmet needs on health outcomes by reason, estimated coefficients

| variable  | outcome   | t  | TWFE               |            |                | Doubly robust      |            |                |
|-----------|-----------|----|--------------------|------------|----------------|--------------------|------------|----------------|
|           |           |    | coefficient<br>(1) | std<br>(2) | p-value<br>(3) | coefficient<br>(4) | std<br>(5) | p-value<br>(6) |
| Any       | dizziness | -1 | 0.010              | 0.006      | 0.068          | 0.004              | 0.007      | 0.564          |
| Any       | dizziness | 0  | 0.011              | 0.006      | 0.051          | 0.008              | 0.006      | 0.218          |
| Any       | dizziness | 1  | 0.021              | 0.006      | 0.000          | 0.017              | 0.006      | 0.004          |
| Afraid    | dizziness | -1 | 0.014              | 0.008      | 0.091          | 0.007              | 0.009      | 0.422          |
| Afraid    | dizziness | 0  | 0.036              | 0.008      | 0.000          | 0.026              | 0.011      | 0.021          |
| Afraid    | dizziness | 1  | 0.047              | 0.008      | 0.000          | 0.037              | 0.011      | 0.001          |
| Postponed | dizziness | -1 | 0.008              | 0.006      | 0.182          | 0.002              | 0.008      | 0.815          |
| Postponed | dizziness | 0  | 0.004              | 0.006      | 0.519          | 0.004              | 0.006      | 0.528          |
| Postponed | dizziness | 1  | 0.017              | 0.006      | 0.007          | 0.016              | 0.006      | 0.004          |
| Denied    | dizziness | -1 | 0.020              | 0.012      | 0.106          | 0.011              | 0.015      | 0.453          |
| Denied    | dizziness | 0  | 0.029              | 0.012      | 0.019          | 0.021              | 0.013      | 0.123          |
| Denied    | dizziness | 1  | 0.030              | 0.012      | 0.014          | 0.021              | 0.013      | 0.112          |
| Any       | falling   | -1 | 0.010              | 0.005      | 0.028          | 0.006              | 0.005      | 0.230          |
| Any       | falling   | 0  | 0.007              | 0.005      | 0.156          | 0.003              | 0.005      | 0.479          |
| Any       | falling   | 1  | 0.013              | 0.005      | 0.007          | 0.011              | 0.006      | 0.049          |
| Afraid    | falling   | -1 | 0.018              | 0.007      | 0.009          | 0.011              | 0.007      | 0.108          |
| Afraid    | falling   | 0  | 0.014              | 0.007      | 0.032          | 0.002              | 0.006      | 0.753          |
| Afraid    | falling   | 1  | 0.017              | 0.007      | 0.013          | 0.005              | 0.009      | 0.540          |
| Postponed | falling   | -1 | 0.011              | 0.005      | 0.024          | 0.007              | 0.005      | 0.176          |
| Postponed | falling   | 0  | 0.007              | 0.005      | 0.191          | 0.004              | 0.006      | 0.518          |
| Postponed | falling   | 1  | 0.013              | 0.005      | 0.008          | 0.012              | 0.006      | 0.040          |
| Denied    | falling   | -1 | 0.007              | 0.010      | 0.475          | 0.002              | 0.011      | 0.870          |
| Denied    | falling   | 0  | 0.019              | 0.010      | 0.060          | 0.020              | 0.013      | 0.125          |
| Denied    | falling   | 1  | 0.011              | 0.010      | 0.264          | 0.012              | 0.013      | 0.354          |
| Any       | fatigue   | -1 | 0.011              | 0.007      | 0.113          | 0.007              | 0.006      | 0.207          |
| Any       | fatigue   | 0  | 0.028              | 0.007      | 0.000          | 0.018              | 0.010      | 0.083          |
| Any       | fatigue   | 1  | 0.037              | 0.007      | 0.000          | 0.028              | 0.010      | 0.006          |
| Afraid    | fatigue   | -1 | -0.003             | 0.010      | 0.748          | -0.009             | 0.010      | 0.401          |
| Afraid    | fatigue   | 0  | 0.046              | 0.010      | 0.000          | 0.049              | 0.020      | 0.012          |
| Afraid    | fatigue   | 1  | 0.052              | 0.010      | 0.000          | 0.057              | 0.014      | 0.000          |
| Postponed | fatigue   | -1 | 0.011              | 0.007      | 0.143          | 0.007              | 0.006      | 0.207          |
| Postponed | fatigue   | 0  | 0.022              | 0.007      | 0.002          | 0.012              | 0.009      | 0.161          |
| Postponed | fatigue   | 1  | 0.032              | 0.007      | 0.000          | 0.026              | 0.010      | 0.012          |
| Denied    | fatigue   | -1 | 0.026              | 0.014      | 0.073          | 0.020              | 0.014      | 0.133          |
| Denied    | fatigue   | 0  | 0.062              | 0.014      | 0.000          | 0.038              | 0.020      | 0.056          |
| Denied    | fatigue   | 1  | 0.066              | 0.015      | 0.000          | 0.041              | 0.025      | 0.102          |

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Table B.1: Effect of having any unmet needs on health outcomes by reason, estimated coefficients

| variable  | outcome         | t  | TWFE               |            |                | Doubly robust      |            |                |
|-----------|-----------------|----|--------------------|------------|----------------|--------------------|------------|----------------|
|           |                 |    | coefficient<br>(1) | std<br>(2) | p-value<br>(3) | coefficient<br>(4) | std<br>(5) | p-value<br>(6) |
| Any       | Fear of falling | -1 | 0.017              | 0.005      | 0.001          | 0.010              | 0.006      | 0.081          |
| Any       | Fear of falling | 0  | 0.044              | 0.005      | 0.000          | 0.029              | 0.006      | 0.000          |
| Any       | Fear of falling | 1  | 0.041              | 0.006      | 0.000          | 0.019              | 0.007      | 0.006          |
| Afraid    | Fear of falling | -1 | 0.030              | 0.008      | 0.000          | 0.022              | 0.006      | 0.001          |
| Afraid    | Fear of falling | 0  | 0.070              | 0.008      | 0.000          | 0.040              | 0.011      | 0.000          |
| Afraid    | Fear of falling | 1  | 0.069              | 0.008      | 0.000          | 0.032              | 0.012      | 0.009          |
| Postponed | Fear of falling | -1 | 0.015              | 0.006      | 0.010          | 0.008              | 0.006      | 0.222          |
| Postponed | Fear of falling | 0  | 0.040              | 0.006      | 0.000          | 0.029              | 0.006      | 0.000          |
| Postponed | Fear of falling | 1  | 0.036              | 0.006      | 0.000          | 0.016              | 0.007      | 0.025          |
| Denied    | Fear of falling | -1 | 0.027              | 0.012      | 0.022          | 0.016              | 0.014      | 0.271          |
| Denied    | Fear of falling | 0  | 0.074              | 0.012      | 0.000          | 0.052              | 0.016      | 0.001          |
| Denied    | Fear of falling | 1  | 0.063              | 0.012      | 0.000          | 0.039              | 0.015      | 0.008          |

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Table B.2: Effect of having GP unmet needs on health outcomes, estimated coefficients

| variable  | outcome   | t  | TWFE               |            |                | Doubly robust      |            |                |
|-----------|-----------|----|--------------------|------------|----------------|--------------------|------------|----------------|
|           |           |    | coefficient<br>(1) | std<br>(2) | p-value<br>(3) | coefficient<br>(4) | std<br>(5) | p-value<br>(6) |
| Any       | dizziness | -1 | 0.022              | 0.009      | 0.019          | 0.016              | 0.012      | 0.181          |
| Any       | dizziness | 0  | 0.038              | 0.009      | 0.000          | 0.023              | 0.009      | 0.007          |
| Any       | dizziness | 1  | 0.059              | 0.009      | 0.000          | 0.040              | 0.009      | 0.000          |
| Afraid    | dizziness | -1 | 0.027              | 0.012      | 0.031          | 0.019              | 0.012      | 0.114          |
| Afraid    | dizziness | 0  | 0.061              | 0.012      | 0.000          | 0.039              | 0.014      | 0.006          |
| Afraid    | dizziness | 1  | 0.080              | 0.012      | 0.000          | 0.054              | 0.013      | 0.000          |
| Postponed | dizziness | -1 | 0.030              | 0.013      | 0.021          | 0.024              | 0.017      | 0.154          |
| Postponed | dizziness | 0  | 0.025              | 0.013      | 0.049          | 0.006              | 0.007      | 0.432          |
| Postponed | dizziness | 1  | 0.052              | 0.013      | 0.000          | 0.027              | 0.012      | 0.027          |
| Denied    | dizziness | -1 | 0.050              | 0.023      | 0.028          | 0.045              | 0.018      | 0.014          |
| Denied    | dizziness | 0  | 0.066              | 0.023      | 0.003          | 0.026              | 0.015      | 0.091          |
| Denied    | dizziness | 1  | 0.044              | 0.023      | 0.054          | 0.002              | 0.020      | 0.900          |
| Any       | falling   | -1 | 0.014              | 0.008      | 0.059          | 0.010              | 0.008      | 0.199          |
| Any       | falling   | 0  | 0.012              | 0.008      | 0.104          | 0.003              | 0.007      | 0.692          |
| Any       | falling   | 1  | 0.025              | 0.008      | 0.001          | 0.015              | 0.009      | 0.074          |
| Afraid    | falling   | -1 | 0.016              | 0.010      | 0.101          | 0.011              | 0.009      | 0.253          |
| Afraid    | falling   | 0  | 0.012              | 0.010      | 0.243          | -0.002             | 0.009      | 0.791          |
| Afraid    | falling   | 1  | 0.028              | 0.010      | 0.005          | 0.013              | 0.012      | 0.273          |
| Postponed | falling   | -1 | 0.015              | 0.010      | 0.137          | 0.013              | 0.012      | 0.306          |
| Postponed | falling   | 0  | 0.017              | 0.010      | 0.096          | 0.009              | 0.011      | 0.410          |
| Postponed | falling   | 1  | 0.028              | 0.010      | 0.008          | 0.019              | 0.015      | 0.197          |
| Denied    | falling   | -1 | 0.033              | 0.018      | 0.074          | 0.032              | 0.021      | 0.129          |
| Denied    | falling   | 0  | 0.026              | 0.018      | 0.161          | -0.003             | 0.025      | 0.913          |
| Denied    | falling   | 1  | 0.021              | 0.018      | 0.262          | -0.007             | 0.025      | 0.762          |
| Any       | fatigue   | -1 | 0.011              | 0.011      | 0.311          | 0.006              | 0.008      | 0.421          |
| Any       | fatigue   | 0  | 0.056              | 0.011      | 0.000          | 0.047              | 0.016      | 0.004          |
| Any       | fatigue   | 1  | 0.076              | 0.011      | 0.000          | 0.064              | 0.011      | 0.000          |
| Afraid    | fatigue   | -1 | -0.002             | 0.015      | 0.866          | -0.013             | 0.015      | 0.408          |
| Afraid    | fatigue   | 0  | 0.067              | 0.015      | 0.000          | 0.073              | 0.026      | 0.005          |
| Afraid    | fatigue   | 1  | 0.076              | 0.015      | 0.000          | 0.075              | 0.022      | 0.001          |
| Postponed | fatigue   | -1 | 0.023              | 0.015      | 0.122          | 0.021              | 0.011      | 0.052          |
| Postponed | fatigue   | 0  | 0.054              | 0.015      | 0.000          | 0.033              | 0.016      | 0.044          |
| Postponed | fatigue   | 1  | 0.084              | 0.015      | 0.000          | 0.061              | 0.016      | 0.000          |
| Denied    | fatigue   | -1 | 0.032              | 0.027      | 0.241          | 0.026              | 0.039      | 0.508          |
| Denied    | fatigue   | 0  | 0.070              | 0.027      | 0.009          | 0.046              | 0.040      | 0.248          |
| Denied    | fatigue   | 1  | 0.093              | 0.027      | 0.001          | 0.068              | 0.041      | 0.098          |

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.



Table B.2: Effect of having GP unmet needs on health outcomes, estimated coefficients

| variable  | outcome         | t  | TWFE               |            |                | Doubly robust      |            |                |
|-----------|-----------------|----|--------------------|------------|----------------|--------------------|------------|----------------|
|           |                 |    | coefficient<br>(1) | std<br>(2) | p-value<br>(3) | coefficient<br>(4) | std<br>(5) | p-value<br>(6) |
| Any       | Fear of falling | -1 | 0.039              | 0.009      | 0.000          | 0.032              | 0.010      | 0.001          |
| Any       | Fear of falling | 0  | 0.074              | 0.009      | 0.000          | 0.037              | 0.014      | 0.008          |
| Any       | Fear of falling | 1  | 0.067              | 0.009      | 0.000          | 0.021              | 0.011      | 0.055          |
| Afraid    | Fear of falling | -1 | 0.044              | 0.012      | 0.000          | 0.035              | 0.013      | 0.008          |
| Afraid    | Fear of falling | 0  | 0.091              | 0.012      | 0.000          | 0.046              | 0.018      | 0.012          |
| Afraid    | Fear of falling | 1  | 0.090              | 0.012      | 0.000          | 0.038              | 0.019      | 0.046          |
| Postponed | Fear of falling | -1 | 0.035              | 0.012      | 0.004          | 0.029              | 0.011      | 0.007          |
| Postponed | Fear of falling | 0  | 0.068              | 0.012      | 0.000          | 0.038              | 0.015      | 0.012          |
| Postponed | Fear of falling | 1  | 0.048              | 0.012      | 0.000          | 0.003              | 0.009      | 0.751          |
| Denied    | Fear of falling | -1 | 0.031              | 0.022      | 0.153          | 0.025              | 0.028      | 0.382          |
| Denied    | Fear of falling | 0  | 0.064              | 0.022      | 0.003          | 0.040              | 0.031      | 0.203          |
| Denied    | Fear of falling | 1  | 0.055              | 0.022      | 0.012          | 0.029              | 0.032      | 0.361          |

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Table B.3: Effect of having specialist care unmet needs on health outcomes, estimated coefficients

| variable  | outcome   | t  | TWFE               |            |                | Doubly robust      |            |                |
|-----------|-----------|----|--------------------|------------|----------------|--------------------|------------|----------------|
|           |           |    | coefficient<br>(1) | std<br>(2) | p-value<br>(3) | coefficient<br>(4) | std<br>(5) | p-value<br>(6) |
| Any       | dizziness | -1 | 0.013              | 0.006      | 0.039          | 0.006              | 0.008      | 0.497          |
| Any       | dizziness | 0  | 0.012              | 0.006      | 0.058          | 0.006              | 0.008      | 0.418          |
| Any       | dizziness | 1  | 0.022              | 0.006      | 0.001          | 0.016              | 0.006      | 0.011          |
| Afraid    | dizziness | -1 | 0.015              | 0.010      | 0.133          | 0.007              | 0.011      | 0.541          |
| Afraid    | dizziness | 0  | 0.044              | 0.010      | 0.000          | 0.032              | 0.014      | 0.025          |
| Afraid    | dizziness | 1  | 0.044              | 0.010      | 0.000          | 0.034              | 0.015      | 0.022          |
| Denied    | dizziness | -1 | 0.036              | 0.015      | 0.013          | 0.027              | 0.021      | 0.208          |
| Denied    | dizziness | 0  | 0.041              | 0.015      | 0.005          | 0.017              | 0.019      | 0.356          |
| Denied    | dizziness | 1  | 0.042              | 0.015      | 0.004          | 0.017              | 0.022      | 0.440          |
| Pospotned | dizziness | -1 | 0.007              | 0.007      | 0.335          | -0.000             | 0.009      | 0.977          |
| Pospotned | dizziness | 0  | -0.001             | 0.007      | 0.863          | 0.000              | 0.007      | 0.966          |
| Pospotned | dizziness | 1  | 0.015              | 0.007      | 0.023          | 0.017              | 0.006      | 0.005          |
| Any       | falling   | -1 | 0.007              | 0.005      | 0.171          | 0.002              | 0.006      | 0.771          |
| Any       | falling   | 0  | 0.004              | 0.005      | 0.390          | 0.006              | 0.007      | 0.385          |
| Any       | falling   | 1  | 0.013              | 0.005      | 0.011          | 0.017              | 0.007      | 0.022          |
| Afraid    | falling   | -1 | 0.017              | 0.008      | 0.032          | 0.010              | 0.009      | 0.290          |
| Afraid    | falling   | 0  | 0.015              | 0.008      | 0.054          | 0.004              | 0.009      | 0.633          |
| Afraid    | falling   | 1  | 0.021              | 0.008      | 0.009          | 0.012              | 0.011      | 0.275          |
| Denied    | falling   | -1 | 0.002              | 0.012      | 0.849          | -0.005             | 0.012      | 0.654          |
| Denied    | falling   | 0  | 0.019              | 0.012      | 0.115          | 0.026              | 0.015      | 0.072          |
| Denied    | falling   | 1  | 0.013              | 0.012      | 0.259          | 0.021              | 0.015      | 0.151          |
| Pospotned | falling   | -1 | 0.009              | 0.005      | 0.116          | 0.004              | 0.007      | 0.548          |
| Pospotned | falling   | 0  | 0.003              | 0.005      | 0.539          | 0.004              | 0.008      | 0.584          |
| Pospotned | falling   | 1  | 0.014              | 0.005      | 0.011          | 0.017              | 0.008      | 0.032          |
| Any       | fatigue   | -1 | 0.009              | 0.007      | 0.226          | 0.004              | 0.007      | 0.608          |
| Any       | fatigue   | 0  | 0.027              | 0.007      | 0.000          | 0.020              | 0.011      | 0.064          |
| Any       | fatigue   | 1  | 0.032              | 0.007      | 0.000          | 0.028              | 0.011      | 0.014          |
| Afraid    | fatigue   | -1 | 0.006              | 0.012      | 0.610          | -0.001             | 0.013      | 0.955          |
| Afraid    | fatigue   | 0  | 0.056              | 0.012      | 0.000          | 0.054              | 0.022      | 0.016          |
| Afraid    | fatigue   | 1  | 0.060              | 0.012      | 0.000          | 0.060              | 0.019      | 0.002          |
| Denied    | fatigue   | -1 | 0.023              | 0.017      | 0.182          | 0.016              | 0.016      | 0.317          |
| Denied    | fatigue   | 0  | 0.059              | 0.017      | 0.001          | 0.038              | 0.022      | 0.081          |
| Denied    | fatigue   | 1  | 0.068              | 0.017      | 0.000          | 0.042              | 0.028      | 0.129          |
| Pospotned | fatigue   | -1 | 0.005              | 0.008      | 0.498          | 0.000              | 0.007      | 0.967          |
| Pospotned | fatigue   | 0  | 0.016              | 0.008      | 0.040          | 0.015              | 0.009      | 0.113          |
| Pospotned | fatigue   | 1  | 0.025              | 0.008      | 0.002          | 0.026              | 0.011      | 0.020          |

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Table B.3: Effect of having specialist care unmet needs on health outcomes, estimated coefficients

| variable  | outcome         | t  | TWFE               |            |                | Doubly robust      |            |                |
|-----------|-----------------|----|--------------------|------------|----------------|--------------------|------------|----------------|
|           |                 |    | coefficient<br>(1) | std<br>(2) | p-value<br>(3) | coefficient<br>(4) | std<br>(5) | p-value<br>(6) |
| Any       | Fear of falling | -1 | 0.014              | 0.006      | 0.021          | 0.005              | 0.005      | 0.352          |
| Any       | Fear of falling | 0  | 0.043              | 0.006      | 0.000          | 0.033              | 0.007      | 0.000          |
| Any       | Fear of falling | 1  | 0.041              | 0.006      | 0.000          | 0.022              | 0.008      | 0.007          |
| Afraid    | Fear of falling | -1 | 0.025              | 0.009      | 0.008          | 0.017              | 0.008      | 0.039          |
| Afraid    | Fear of falling | 0  | 0.071              | 0.009      | 0.000          | 0.046              | 0.012      | 0.000          |
| Afraid    | Fear of falling | 1  | 0.066              | 0.009      | 0.000          | 0.033              | 0.015      | 0.033          |
| Denied    | Fear of falling | -1 | 0.033              | 0.014      | 0.020          | 0.018              | 0.014      | 0.177          |
| Denied    | Fear of falling | 0  | 0.089              | 0.014      | 0.000          | 0.062              | 0.021      | 0.002          |
| Denied    | Fear of falling | 1  | 0.075              | 0.014      | 0.000          | 0.044              | 0.020      | 0.029          |
| Pospotned | Fear of falling | -1 | 0.011              | 0.006      | 0.080          | 0.002              | 0.006      | 0.725          |
| Pospotned | Fear of falling | 0  | 0.037              | 0.006      | 0.000          | 0.031              | 0.007      | 0.000          |
| Pospotned | Fear of falling | 1  | 0.038              | 0.006      | 0.000          | 0.022              | 0.008      | 0.007          |

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Table B.4: Effect of having planned care unmet needs on health outcomes, estimated coefficients

| variable  | outcome   | t  | TWFE               |            |                | Doubly robust      |            |                |
|-----------|-----------|----|--------------------|------------|----------------|--------------------|------------|----------------|
|           |           |    | coefficient<br>(1) | std<br>(2) | p-value<br>(3) | coefficient<br>(4) | std<br>(5) | p-value<br>(6) |
| Denied    | dizziness | -1 | -0.014             | 0.039      | 0.719          | -0.035             | 0.049      | 0.471          |
| Denied    | dizziness | 0  | 0.016              | 0.039      | 0.691          | 0.049              | 0.048      | 0.306          |
| Denied    | dizziness | 1  | 0.003              | 0.039      | 0.931          | 0.028              | 0.046      | 0.538          |
| Postponed | dizziness | -1 | 0.011              | 0.015      | 0.449          | -0.002             | 0.015      | 0.902          |
| Postponed | dizziness | 0  | 0.028              | 0.015      | 0.055          | 0.028              | 0.017      | 0.099          |
| Postponed | dizziness | 1  | 0.044              | 0.015      | 0.002          | 0.042              | 0.017      | 0.012          |
| Afraid    | dizziness | -1 | 0.043              | 0.024      | 0.066          | 0.031              | 0.024      | 0.196          |
| Afraid    | dizziness | 0  | 0.033              | 0.024      | 0.158          | -0.001             | 0.027      | 0.977          |
| Afraid    | dizziness | 1  | 0.028              | 0.024      | 0.239          | -0.008             | 0.034      | 0.815          |
| Any       | dizziness | -1 | 0.019              | 0.013      | 0.154          | 0.006              | 0.013      | 0.666          |
| Any       | dizziness | 0  | 0.027              | 0.013      | 0.038          | 0.019              | 0.017      | 0.261          |
| Any       | dizziness | 1  | 0.027              | 0.013      | 0.043          | 0.014              | 0.015      | 0.322          |
| Denied    | falling   | -1 | 0.008              | 0.032      | 0.807          | -0.000             | 0.058      | 0.998          |
| Denied    | falling   | 0  | 0.053              | 0.032      | 0.096          | 0.058              | 0.050      | 0.250          |
| Denied    | falling   | 1  | 0.042              | 0.032      | 0.190          | 0.043              | 0.054      | 0.423          |
| Postponed | falling   | -1 | -0.003             | 0.012      | 0.814          | -0.012             | 0.016      | 0.424          |
| Postponed | falling   | 0  | 0.019              | 0.012      | 0.112          | 0.029              | 0.019      | 0.115          |
| Postponed | falling   | 1  | 0.016              | 0.012      | 0.168          | 0.028              | 0.019      | 0.149          |
| Afraid    | falling   | -1 | 0.018              | 0.019      | 0.336          | 0.005              | 0.024      | 0.832          |
| Afraid    | falling   | 0  | -0.010             | 0.019      | 0.609          | -0.022             | 0.025      | 0.366          |
| Afraid    | falling   | 1  | -0.023             | 0.019      | 0.236          | -0.037             | 0.028      | 0.183          |
| Any       | falling   | -1 | 0.005              | 0.011      | 0.625          | -0.005             | 0.012      | 0.682          |
| Any       | falling   | 0  | 0.010              | 0.011      | 0.373          | 0.011              | 0.014      | 0.433          |
| Any       | falling   | 1  | 0.005              | 0.011      | 0.622          | 0.008              | 0.016      | 0.629          |
| Denied    | fatigue   | -1 | 0.062              | 0.047      | 0.187          | 0.043              | 0.047      | 0.357          |
| Denied    | fatigue   | 0  | 0.053              | 0.047      | 0.254          | -0.002             | 0.052      | 0.971          |
| Denied    | fatigue   | 1  | 0.055              | 0.047      | 0.237          | -0.001             | 0.062      | 0.992          |
| Postponed | fatigue   | -1 | 0.021              | 0.017      | 0.226          | 0.009              | 0.020      | 0.664          |
| Postponed | fatigue   | 0  | 0.046              | 0.017      | 0.008          | 0.024              | 0.017      | 0.154          |
| Postponed | fatigue   | 1  | 0.030              | 0.017      | 0.088          | 0.013              | 0.025      | 0.588          |
| Afraid    | fatigue   | -1 | 0.035              | 0.028      | 0.219          | 0.020              | 0.031      | 0.525          |
| Afraid    | fatigue   | 0  | 0.053              | 0.028      | 0.062          | 0.023              | 0.032      | 0.475          |
| Afraid    | fatigue   | 1  | 0.037              | 0.028      | 0.185          | 0.009              | 0.035      | 0.789          |
| Any       | fatigue   | -1 | 0.033              | 0.016      | 0.036          | 0.020              | 0.015      | 0.179          |
| Any       | fatigue   | 0  | 0.052              | 0.016      | 0.001          | 0.019              | 0.017      | 0.250          |
| Any       | fatigue   | 1  | 0.040              | 0.016      | 0.011          | 0.012              | 0.020      | 0.557          |

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Table B.4: Effect of having planned care unmet needs on health outcomes, estimated coefficients

| variable  | outcome         | t  | TWFE               |            |                | Doubly robust      |            |                |
|-----------|-----------------|----|--------------------|------------|----------------|--------------------|------------|----------------|
|           |                 |    | coefficient<br>(1) | std<br>(2) | p-value<br>(3) | coefficient<br>(4) | std<br>(5) | p-value<br>(6) |
| Denied    | Fear of falling | -1 | 0.062              | 0.038      | 0.101          | 0.053              | 0.045      | 0.240          |
| Denied    | Fear of falling | 0  | 0.194              | 0.038      | 0.000          | 0.144              | 0.044      | 0.001          |
| Denied    | Fear of falling | 1  | 0.117              | 0.038      | 0.002          | 0.052              | 0.060      | 0.387          |
| Postponed | Fear of falling | -1 | 0.040              | 0.014      | 0.005          | 0.027              | 0.016      | 0.094          |
| Postponed | Fear of falling | 0  | 0.082              | 0.014      | 0.000          | 0.047              | 0.014      | 0.001          |
| Postponed | Fear of falling | 1  | 0.074              | 0.014      | 0.000          | 0.030              | 0.012      | 0.012          |
| Afraid    | Fear of falling | -1 | 0.026              | 0.023      | 0.244          | 0.013              | 0.023      | 0.556          |
| Afraid    | Fear of falling | 0  | 0.053              | 0.023      | 0.018          | 0.032              | 0.027      | 0.237          |
| Afraid    | Fear of falling | 1  | 0.007              | 0.023      | 0.753          | -0.020             | 0.030      | 0.494          |
| Any       | Fear of falling | -1 | 0.044              | 0.013      | 0.001          | 0.032              | 0.015      | 0.033          |
| Any       | Fear of falling | 0  | 0.078              | 0.013      | 0.000          | 0.037              | 0.013      | 0.003          |
| Any       | Fear of falling | 1  | 0.059              | 0.013      | 0.000          | 0.010              | 0.013      | 0.423          |

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Table B.5: Effect of having physiotherapist/psychologist/rehabilitation care unmet needs on health outcomes, estimated coefficients

| variable  | outcome   | t  | TWFE               |            |                | Doubly robust      |            |                |
|-----------|-----------|----|--------------------|------------|----------------|--------------------|------------|----------------|
|           |           |    | coefficient<br>(1) | std<br>(2) | p-value<br>(3) | coefficient<br>(4) | std<br>(5) | p-value<br>(6) |
| Any       | dizziness | -1 | 0.013              | 0.014      | 0.377          | -0.004             | 0.017      | 0.833          |
| Any       | dizziness | 0  | 0.026              | 0.014      | 0.066          | 0.026              | 0.020      | 0.200          |
| Any       | dizziness | 1  | 0.009              | 0.014      | 0.528          | 0.010              | 0.013      | 0.430          |
| Afraid    | dizziness | -1 | 0.022              | 0.025      | 0.363          | 0.005              | 0.027      | 0.868          |
| Afraid    | dizziness | 0  | 0.060              | 0.025      | 0.014          | 0.050              | 0.035      | 0.155          |
| Afraid    | dizziness | 1  | 0.014              | 0.025      | 0.563          | -0.000             | 0.022      | 0.997          |
| Postponed | dizziness | -1 | -0.004             | 0.016      | 0.795          | -0.020             | 0.018      | 0.279          |
| Postponed | dizziness | 0  | 0.001              | 0.016      | 0.951          | 0.018              | 0.017      | 0.293          |
| Postponed | dizziness | 1  | -0.003             | 0.016      | 0.859          | 0.018              | 0.015      | 0.251          |
| Denied    | dizziness | -1 | 0.035              | 0.045      | 0.440          | 0.026              | 0.053      | 0.624          |
| Denied    | dizziness | 0  | 0.022              | 0.045      | 0.623          | 0.004              | 0.042      | 0.926          |
| Denied    | dizziness | 1  | 0.021              | 0.046      | 0.649          | 0.000              | 0.055      | 1.000          |
| Any       | falling   | -1 | 0.061              | 0.012      | 0.000          | 0.053              | 0.013      | 0.000          |
| Any       | falling   | 0  | 0.060              | 0.012      | 0.000          | 0.005              | 0.012      | 0.646          |
| Any       | falling   | 1  | 0.057              | 0.012      | 0.000          | 0.007              | 0.016      | 0.640          |
| Afraid    | falling   | -1 | 0.046              | 0.020      | 0.020          | 0.037              | 0.014      | 0.007          |
| Afraid    | falling   | 0  | 0.043              | 0.020      | 0.033          | 0.000              | 0.024      | 0.996          |
| Afraid    | falling   | 1  | 0.059              | 0.020      | 0.003          | 0.023              | 0.025      | 0.359          |
| Postponed | falling   | -1 | 0.061              | 0.013      | 0.000          | 0.053              | 0.015      | 0.000          |
| Postponed | falling   | 0  | 0.055              | 0.013      | 0.000          | 0.002              | 0.014      | 0.886          |
| Postponed | falling   | 1  | 0.051              | 0.013      | 0.000          | 0.003              | 0.015      | 0.837          |
| Denied    | falling   | -1 | 0.028              | 0.037      | 0.453          | 0.026              | 0.063      | 0.681          |
| Denied    | falling   | 0  | 0.103              | 0.037      | 0.005          | 0.099              | 0.063      | 0.116          |
| Denied    | falling   | 1  | 0.007              | 0.037      | 0.850          | -0.011             | 0.058      | 0.846          |
| Any       | fatigue   | -1 | 0.004              | 0.017      | 0.792          | -0.004             | 0.012      | 0.739          |
| Any       | fatigue   | 0  | 0.050              | 0.017      | 0.003          | 0.046              | 0.024      | 0.055          |
| Any       | fatigue   | 1  | 0.050              | 0.017      | 0.003          | 0.051              | 0.016      | 0.001          |
| Afraid    | fatigue   | -1 | -0.032             | 0.029      | 0.280          | -0.045             | 0.033      | 0.174          |
| Afraid    | fatigue   | 0  | 0.096              | 0.029      | 0.001          | 0.137              | 0.067      | 0.041          |
| Afraid    | fatigue   | 1  | 0.020              | 0.029      | 0.494          | 0.056              | 0.038      | 0.137          |
| Postponed | fatigue   | -1 | 0.013              | 0.020      | 0.502          | 0.005              | 0.012      | 0.693          |
| Postponed | fatigue   | 0  | 0.032              | 0.020      | 0.099          | 0.021              | 0.023      | 0.351          |
| Postponed | fatigue   | 1  | 0.063              | 0.020      | 0.001          | 0.056              | 0.016      | 0.000          |
| Denied    | fatigue   | -1 | -0.063             | 0.054      | 0.246          | -0.072             | 0.054      | 0.185          |
| Denied    | fatigue   | 0  | -0.035             | 0.054      | 0.520          | 0.027              | 0.054      | 0.615          |
| Denied    | fatigue   | 1  | 0.001              | 0.054      | 0.985          | 0.079              | 0.057      | 0.166          |

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.

Table B.5: Effect of having physiotherapist/psychologist/rehabilitation care unmet needs on health outcomes, estimated coefficients

| variable  | outcome         | t  | TWFE               |            |                | Doubly robust      |            |                |
|-----------|-----------------|----|--------------------|------------|----------------|--------------------|------------|----------------|
|           |                 |    | coefficient<br>(1) | std<br>(2) | p-value<br>(3) | coefficient<br>(4) | std<br>(5) | p-value<br>(6) |
| Any       | fear of falling | -1 | 0.055              | 0.014      | 0.000          | 0.046              | 0.021      | 0.029          |
| Any       | fear of falling | 0  | 0.078              | 0.014      | 0.000          | 0.025              | 0.024      | 0.289          |
| Any       | fear of falling | 1  | 0.076              | 0.014      | 0.000          | 0.018              | 0.023      | 0.435          |
| Afraid    | fear of falling | -1 | 0.093              | 0.024      | 0.000          | 0.089              | 0.028      | 0.001          |
| Afraid    | fear of falling | 0  | 0.116              | 0.024      | 0.000          | 0.022              | 0.028      | 0.443          |
| Afraid    | fear of falling | 1  | 0.088              | 0.024      | 0.000          | -0.019             | 0.029      | 0.512          |
| Postponed | fear of falling | -1 | 0.052              | 0.016      | 0.001          | 0.045              | 0.023      | 0.053          |
| Postponed | fear of falling | 0  | 0.068              | 0.016      | 0.000          | 0.017              | 0.025      | 0.489          |
| Postponed | fear of falling | 1  | 0.070              | 0.016      | 0.000          | 0.017              | 0.027      | 0.529          |
| Denied    | fear of falling | -1 | -0.004             | 0.043      | 0.932          | -0.023             | 0.060      | 0.703          |
| Denied    | fear of falling | 0  | 0.074              | 0.043      | 0.090          | 0.101              | 0.059      | 0.088          |
| Denied    | fear of falling | 1  | 0.045              | 0.044      | 0.305          | 0.058              | 0.076      | 0.444          |

Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. Individuals who have had unmet health care needs for the first time during the second wave of the SHARE Corona survey are dropped. We also drop individuals who have had unmet needs during the wave 8 of regular SHARE survey. Note: The sample is composed of individuals observed in first and second waves of the SHARE Corona survey, as well as the waves 7 and 8 of the regular SHARE survey. See Table B.1 for the sample size, the standard errors and the p-values for each coefficient of each regression. Bootstrapped standard errors with 100 replications, clustered at the country level.