Evolution of physical function, cognition, depressive mood, and quality of life during the Covid-19 pandemic in prefrail elderly people: A longitudinal cohort study (Covid-Mefap)

María Victoria Castell-Alcalá [a,b,c,*], Ricardo Rodríguez-Barrientos [d,e], Elena Polentinos-Castro [d,e,f,g], Bárbara Moreno Caballero [h], David Morales Tejera [i,j,k], Elena Plans Beriso [l], Alicia Gutiérrez-Misis [b,c], MEFAP group [1]

[a] Dr. Castroviejo Primary Care Health Center, Northern health directorate, Madrid Health Service (SERMAS), Madrid, Spain
[b] Department of Medicine, Unit of Family Medicine and Primary Care, Faculty of Medicine, Universidad Autónoma de Madrid, Spain
[c] Hospital La Paz Institute for Health Research IdiPAZ, Madrid, Spain
[d] Primary Care Research Unit, Primary Care Health Management, Madrid Health Service (SERMAS), Madrid, Spain
[e] Research Network on Health Services in Chronic Diseases (REDISSEC) and Research Network On Chronicity, Primary Health Care and Health Promotion (RICORS-RICAPPS), Instituto de Salud Carlos III (ISCIII), Madrid, Spain
[f] Institute for Health Research Gregorio Marañon (IiSGM), Madrid Health Service (SERMAS), Madrid, Spain
[g] Preventive Medicine and Public Health Area, Faculty of Health Sciences, Rey Juan Carlos University, Alcorcón, Madrid, Spain
[h] Guayaba Primary Care Health Center, Center health directorate, Madrid Health Service (SERMAS), Madrid, Spain
[i] International Doctoral School, Department of Physical Therapy, Occupational Therapy, Rehabilitation and Physical Medicine, Universidad Rey Juan Carlos, Alcorcón, Spain
[j] Department of Physiotherapy, Human Physiology and Anatomy, Faculty of Physical Education and Physiotherapy, Vrije Universiteit Brussel, Brussels, Belgium
[k] Pain in Motion Research Group (PAIN), Department of Physiotherapy, Human Physiology and Anatomy, Faculty of Physical Education and Physiotherapy, Vrije Universiteit Brussel, Brussels, Belgium
[l] Research group for Epidemiology and Public Health, Department of Surgery and Medical and Social Sciences, Faculty of Medicine and Health Sciences, University of Alcalá, Alcalá de Henares, Madrid, Spain

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ABSTRACT

Confinement due to the COVID-19 pandemic has had a major impact on the living habits and health of the population, notably in the pre-frail elderly. This study aimed to study the effect of the COVID-19 pandemic on the physical function, mental function (cognition and mood), and quality of life of pre-frail elderly individuals over 70 years of age following confinement as well as to analyze the variables associated with the observed changes. *Methods:* Observational study of a cohort of pre-frail community-dwelling older adults over 70 years of age during the COVID-19 pandemic conducted in primary care. Variables: The main outcome variables were

* Corresponding author at: Healthcare center Dr. Castroviejo, c/ Cándido Mateos 11, 28035 Madrid, Spain.
  E-mail address: mariavictoria.castell@uam.es (M.V. Castell-Alcalá).
  [1] The MEFAP group is formed by:

- Mercedes Sánchez-Martínez
- María del Puerto de Antonio García
- Sara Núñez Palomo
- Rocío Triano Sánchez
- Carmen Mateo Pascual
- Dolores Cano Pérez
- Araceli Garrido Barral
- Ángel Otero Puime
- Bárbara Moreno Caballero
- Alicia Gutiérrez-Misis
- María Prieto Aldana
- Rosa Julián Viñals
- María Victoria Castell Alcalá

Quality of life
Prefrail elderly

recorded during face-to-face interviews between December 14 of 2020 and August 12 of 2021 using scales for the evaluation of physical function (Short Physical Performance Battery), cognition (Lobo's Mini-Examen Cognoscitivo), depressive mood (Geriatric Depression Scale), and quality of life (EuroQol-5D-3L). Covariates: sociodemographic data and variables related to the pandemic and general health (social support network, COVID-19 infection, exercising, and leisure activities) were also collected. Analysis: The Student's *t*-test for paired samples and multivariate linear regression models were employed for the statistical analyses.

Results: Ninety-two subjects were included in the study. Physical function, cognition, and depressive mood improved during the pandemic, whereas no changes were observed in quality of life. Suffering from COVID-19 was associated with deterioration of the cognitive function (−1.460; CI95%: −2.710 to −0.211).

Conclusion: Confinement due to the COVID-19 pandemic was not associated with a decline in physical function, cognition, depressive mood, or quality of life in pre-frail individuals over 70 years of age.

1. Introduction

The global coronavirus (COVID-19) pandemic declared by the WHO on March 11 of 2020 had a dramatic impact on the health of the population, especially older adults (CEPAL.ORG, 2020; Fernández-Ballesteros and Sánchez-Izquierdo Alonso, 2020). The initial public health response in different countries focused on preventing the spread of the virus in the community by increasing physical distance among citizens. Diverse measures were implemented to achieve this so-called social distancing, such as home confinement, closure of non-essential business, cancellation of social activities, and limitation of visits to nursing homes for the elderly. In Spain, an initial phase of strict confinement took place between March 14 and May 2 of 2020, followed by subsequent restrictive measures of various degrees (in mode and intensity) throughout the different waves.

While confinement and mobility restrictions were essential to limit the spread of the disease, they caused a radical, sudden change in people's lifestyles, especially in terms of dietary habits and overall physical activity levels, which decreased up to 38 % in the general population (Ammar et al., 2020a; Oliveira et al., 2022). Social isolation and perception of loneliness also increased, which are factors that potentially entail serious consequences for the physical and mental health of vulnerable people and older adults (Conroy et al., 2020). Several studies have shown loneliness to be associated with greater morbidity related to elevated systolic blood pressure, risk of heart disease, and all-cause mortality. Furthermore, isolation promotes adverse mental-health events such as sleep disturbance, depression symptoms, cognitive deterioration, and poorer perceived quality of life (Hwang et al., 2020).

The major changes caused by the imposed social distancing during the first year of the pandemic allowed studying its impact on the health and quality of life of older adults while analyzing the individual and collective factors that may favor individual resilience. Finding the relevant variables affecting resilience can help to plan interventions aimed at preventing and improving the health of pre-frail community-dwelling elders.

The MEFAP project is an ongoing multicenter intervention study that aims to evaluate the effect of a multi-component physical activity program, compared to usual clinical practice, to reverse pre-frailty status according to Fried's frailty criteria, in people over 70 years of age one year after the end of the intervention (Castell et al., 2019). The MEFAP study was launched in 2018 in the primary care setting and had 206 subjects included between the intervention and control groups at the beginning of the COVID-19 pandemic.

The present study, designed as a sub-trial of the MEFAP project, had two objectives. First, it aimed to analyze the impact of the COVID-19 pandemic on the physical function, cognition, depressive mood, and quality of life of pre-frail elderly individuals over 70 years of age following confinement. Second, the study sought to evaluate the variables found to associate with the observed changes. Describing the activities and clinical situation of this population during confinement was also included as a secondary objective.

2. Material and methods

2.1. Design

Prospective observational study of a cohort of patients designed as a sub-study from a former study named MEFAP (Castell et al., 2019) as a result of the COVID-19 pandemic. The COVID-MEFAP sub-study was conducted within the Primary Care Service of the Autonomous Community of Madrid (Spain) by offering participation to the patients already included in the MEFAP project.

2.2. Study population

The studied population was subjects over 70 years of age classified as pre-frail according to Fried's frailty criteria (Fried et al., 2001). Participants were selected from the former MEFAP project (Castell et al., 2019), a pragmatic multicenter randomized clinical trial assessing a multi-component physical exercise intervention in the pre-frail elderly, with two parallel groups and a 12-month follow-up. Patients were contacted on the phone and offered to participate by answering a questionnaire designed ad hoc to collect epidemiological, clinical, and physical exploration data (Annex 1). Ninety-two of the 206 subjects included in the MEFAP project at the baseline of the current trial agreed to participate in the sub-study COVID-MEFAP.

2.3. Variables

Changes in the main outcome variables since the pandemic onset were evaluated through the following scales: Short Physical Performance Battery (SPPB) for physical function, Mini-Examen Cognoscitivo MEC (validated version of Folstein's Mini-Mental State Examination adapted to Spanish by Lobo) for cognitive function, Geriatric Depression Scale (GDS) for depressive mood, and EuroQol 5 Dimensions 3 Level version (EQ-5D-3L) for quality of life. The baseline values of these variables were obtained between June 7 of 2018 and March 5 of 2020 as part of the data collected by the MEFAP study prior to the start of the pandemic. These outcomes were measured again via face-to-face interviews between December 14 of 2020 and August 12 of 2021.

In addition to recording sociodemographic data (age, gender, marital status, etc.), a questionnaire was designed ad hoc (Annex 1) to collect the following variables related to the COVID-19 pandemic:

- Social support and network: death of a close one during the pandemic, number of co-habitants, and contact with children and grandchildren.
- Leisure activities: frequency of social contact, use of new technologies, reading, memory exercises, handcrafts, and television consumption.
- Health-related: having suffered COVID-19, worsening of chronic disease, and exercising during strict confinement (March to May 2020) and after June 2020.

2.4. Ethical aspects

The COVID-MEFAP cohort study was approved as an extension of the MEFAP trial by the Ethics Committee for Research of the IdiPAZ Hospital Universitario La Paz (HULP code: 5004_2144612) and the Primary Care Research Unit of the Autonomous Community of Madrid on December 1, 2021. All participants provided informed consent before their inclusion.

2.5. Statistical analysis

Participant characteristics were described by their mean and standard deviation in the case of quantitative variables and by their absolute frequency and percentage in the case of qualitative ones. Differences between the participants of the MEFAP and COVID-MEFAP projects were assessed. The Student's *t*-test for paired samples was used to evaluate the overtime changes (between baseline and post-pandemic) in the means of variables for physical function, cognition, depressive mood, and quality of life, with their 95 % confidence interval (CI).

Multivariate linear regression models examined the association of changes in each main outcome variable over time (post-pandemic minus baseline values) with the rest of independent variables. All models were adjusted for age, gender and educational level. The linear coefficients were obtained with their corresponding CI95%. The adjusted R^2 was calculated for all models in order to choose those with the best statistical fit. The software Stata v.14. was employed to perform all statistical analyses.

3. Results

Ninety-two individuals, 65 women and 27 men, between 71 and 95 years of age [median = 77.2 years; interquartile range (IQR): 74.5–81.3] were included in the study. Compared to the original study, no significant differences were observed in age, gender, education level, and marital status or in the baseline values of variables measuring the physical function, cognition, depressive mood, and quality of life.

In terms of sociodemographic characteristics, 39 % of the subjects reported a monthly income of less than €1000, 29 % were widowed, and 38 % reported living alone (Table 1). Table 2 shows the changes in social relationships, activities performed, and clinical situation throughout the pandemic time. In terms of social support networks, 37 % lost a close person after March 14 of 2020, which on five occasions (5.4 %) was a partner or child. 58 % and 89 % of participants stated that they had not/barely seen their children and grandchildren, respectively, and 51 % discontinued social activities altogether.

Table 1
Sociodemographic factors by gender. Pre-pandemic data.

	Total (*n* = 92)	Men (*n* = 27)	Women (*n* = 65)
Age (median [IQR])	77.2 [74.5–81.3]	77.6 [75.0–82.6]	76.7 [74.0–80.6]
Economic situation (n, %)			
<€1000 monthly income	36 (39.1)	6 (22.2)	30 (46.2)
Reported having difficulty to make ends meet	31 (33.7)	5 (18.6)	26 (40.0)
Education level (n, %)			
No studies	35 (38.0)	12 (44.4)	23 (35.4)
Primary education	34 (37.0)	6(22.2)	28 (43.1)
Vocational training/sec. education	17 (18.5)	6 (22.2)	11 (16.9)
University	6 (6.5)	3 (11.1)	3 (4.6)
Marital status (n, %)			
Widow/er	27 (29)	3(11)	24 (37)
Single/separated	13 (14)	6 (22)	7 (11)
Married	52 (57)	18 (67)	34 (52)
Living alone (n, %)	35 (38.0)	7 (25.9)	28 (43.1)

IQR: interquartile range.

Table 2
situation during the pandemic (factors related to social support networks and leisure activities) by gender.

	Total (n = 92) n (%)	Men (n = 27) n (%)	Women (n = 65) n (%)
Death of a close person during the pandemic	34 (37)	8 (30)	26 (40)
Has barely or not at all seen			
Children	52 (58)	14 (56)	38 (59)
Grandchildren	55 (71)	17 (74)	38 (70)
Has completely discontinued social activities	47 (51)	11 (41)	36 (55)
Has completely discontinued leisure activities	50 (54)	11 (41)	39 (60)
Overall physical activity			
During strict confinement	76 (83)	20 (74)	56 (86)
During phases of social distancing	82 (89)	23 (85)	59 (91)
Reading time equal to or greater than pre-pandemic	56 (61)	18 (67)	38 (58)
Memory exercises equal to or greater than pre-pandemic	40 (43)	12 (44)	28 (43)
Doing crafts equal to or greater than pre-pandemic	38 (41)	7 (26)	31 (48)
Time spent on social networks: started or increased	43 (47)	15 (56)	28 (43)
Has had COVID-19	14 (15)	6 (22)	8 (12)
Worsening of chronic disease	14 (15)	3 (11)	11 (17)

In terms of changes in health, 14 patients developed COVID-19 (15 %) and 14 individuals reported the worsening of their chronic pathologies (15 %). During strict confinement, the participants exercised in 83 % of the cases, most often by walking around the house (60 % of the individuals for a median of 18 min). In a subsequent phase from June onwards, the proportion of exercising individuals increased up to 89 %, mainly involving walking in the street (70 % of the cases for a median of 60 min).

The time spent performing various leisure activities increased, specifically at reading (61 % of the subjects), memory exercises (43 %), and arts and crafts (41 %). Forty-seven percent of the interviewed subjects stated that they had initiated themselves in or increased the use of information and communication technologies (ICTs), and 91 % reported spending the same or more time than before watching television (median 4 h, IQR: 3–5 h).

In terms of the changes observed in the main outcome variables between the pre- and post- pandemic visits (median time elapsed 476 days; IQR: 408–639), statistically significant changes were found in the cognitive function ($p = 0.002$), depressive mood ($p = 0.008$), and physical function ($p = 0.010$) of the participants, while no changes were observed in their quality of life (Table 3).

Linear regression models were built to analyze and determine which variables were associated with the observed changes in cognitive function, depressive mood, and physical function. All models were adjusted by gender, age, education level, and by the baseline value of each included variable (Tables 4, 5, and 6). A relationship was observed between the deterioration in cognitive function and having suffered COVID-19 (−1.460; CI95%: −2.710 to −0.211).

4. Discussion

The drastic changes in lifestyle habits that occurred in the first months of the COVID-19 pandemic, especially during the months of strict population confinement, did not entail a worsening in the physical function, cognitive function, mood, or quality of life of the pre-frail studied population. The results of the present study even pointed to an improvement in the physical function, cognitive function, and depressive mood of this population, in line with other studies conducted in our setting (Dura-Perez et al., 2022).

The study population was comprised of pre-frail adults over 70 years

Table 3

Changes in cognitive function, depressive mood, physical function, and quality of life since the pandemic onset.

	Mean (SD)	Difference between means[a] (CI95%)	P-value
COGNITIVE FUNCTION (Lobo's MEC)			
PRE	26.40 (2.92)	0.80 (0.30–1.31)	0.002
POST	27.21 (2.83)		
DEPRESSIVE MOOD (GDS)			
PRE	11.61 (2.90)	−0.83 (−1.43 to −0.22)	0.008
POST	10.78 (3.14)		
PHYSICAL FUNCTION (SPPB)			
PRE	9.66 (1.87)	0.45 (0.11–0.78)	0.010
POST	10.11 (1.76)		
QUALITY OF LIFE (EQ-5D-3L)			
PRE	68.72 (16.11)	0.47 (−3.60–4.53)	0.820
POST	69.80 (17.14)		

MEC: mini-examen cognoscitivo by Lobo.
GDS: Geriatric Depression Scale.
SPPB: Short Physical Performance Battery.
EQ-5D-3L: EuroQol-5 dimension-3 level.
  [a] Difference between pre- and post-pandemic mean values.

Table 4

Factors associated with changes in the cognitive function. Linear multivariate regression model.

	Coef.	95%CI	P-value
Basal cognitive function (MEC Lobo)	−0.388	(−0.542 to −0.235)	<0.001
Self-perceived worsening of chronic disease	−1.132	(−2.361–0.097)	0.070
Having had COVID-19	−1.460	(−2.710 to −0.211)	0.023
Gender	−0.569	(−1.535–0.396)	0.244
Age	−0.038	(−0.129–0.054)	0.418
Education level	0.018	(−0.476–0.512)	0.944

Adjusted $R^2 = 0.254$.
MEC: mini-examen cognoscitive by Lobo.

Table 5

Factors associated with changes in depressive mood. Linear multivariate regression model.

	Coef.	95%CI	P-value
Depressive mood (GDS)	0.433	(0.232–0.633)	<0.001
Discontinuing social activities	1.031	(−0.084–0.215)	0.069
Gender	0.563	(−0.669–1.794)	0.366
Age	0.034	(−0.829–0.151)	0.565
Education level	0.388	(−0.232–1.007)	0.217

Adjusted $R^2 = 0.183$.
GDS: Geriatric Depression Scale by Yesavage.

Table 6

Factors associated with changes in the physical function. Linear multivariate regression model.

	Coef.	95%CI	P-value
Basal physical function (SPPB)	0.476	(0.313–0.640)	<0.001
Overweight and obesity (BMI ≥ 25)	−0.663	(−1.474–0.148)	0.108
Gender	0.121	(−0.528–0.770)	0.712
Age	0.035	(−0.027–0.097)	0.267
Education level	−0.239	(−0.572–0.093)	0.156

Adjusted $R^2 = 0.262$.
SPPB: Short Physical Performance Battery. BMI: body mass index.

with sleep habits and leisure activities, staying physically and mentally active with cognitive stimulation exercises, and maintaining social connections help to overcome a negative experience such as long-term confinement (Goodman-Casanova et al., 2020). Along this line, the sociodemographic variables analyzed in the present study (age, gender, economic level, marital status, or living alone) were not associated with changes in both physical and mental functions.

Television was the most frequently used source of information during confinement. The majority of the participants in the present study reported spending the same or more time watching television than before the pandemic with an average daily consumption of 4 h, which may have contributed to a better understanding of the situation and thus facilitated better adaptation and adequate response to the pandemic (Dura-Perez et al., 2022; Goodman-Casanova et al., 2020; Ministerio de Sanidad, 2022).

Older adults are more vulnerable to social problems, isolation, and loneliness since their functionality highly depends on family or community service support (Hwang et al., 2020). Additionally, their psychological and social needs increase when they become dependent, depressed, or cognitively impaired (Carvacho et al., 2021). This study observed that the severe social restrictions necessary to prevent the spread of COVID-19 during the pandemic resulted in a drastic decrease in physical contact with children and grandchildren and in the cessation of social activities which, nevertheless, do not seem to have entailed a worsening of mood or quality of life. Adequate social networks, family support, and a high level of resilience in the elderly may have contributed and enabled them to overcome the harmful effects of adversity and adapt to the situation through positive reconstruction (Vazquez, 2019).

The experience of confinement has made us aware of the need to prevent the deleterious effects of loneliness and social isolation (Hwang et al., 2020). Confinement generated a wave of solidarity in our society towards the elderly and vulnerable people in general, prompting multiple initiatives at the informal level in the realm of family, friends, neighbors, and different associations that allowed individuals to stay connected (El País, 2022). Studies show that relying on a trustworthy support network is highly beneficial, reducing the risk of contagion while guaranteeing food and medical supplies. Even if participants were part of an ongoing program that may have been a beneficial factor for their resilience level, a solid network of affective support is a determining factor in strengthening resilience in the elderly (Vazquez, 2019).

Confinement resulted in a decrease in physical activity that was estimated to occur in 24 % of the population over 18 years of age worldwide, together with a 28 % increase in sedentarism (Ammar et al., 2020b). Although physical inactivity is known to cause an increase in body mass and loss of muscle function (da Rocha et al., 2021; Reyes-Olavarría et al., 2020), overweight was not shown to be a determining factor after adjusting the predictive model for changes in physical function for age, gender, and education level. The limited sample size may have affected these outcomes. Experiencing confinement also showed that, despite the general awareness of the recommendations for healthy physical activity, people need additional support and motivation to effectively use the services available. In this sense, technology and social networks provide novel means of support for promoting healthy lifestyle habits (Ammar et al., 2020b).

of age who preferably live accompanied and rely on a stable social and family network. Similar to reports by other research (Dura-Perez et al., 2022), the use of ICTs increased during the pandemic, especially Whatsapp messages or video calls on the smartphone, as well as the time spent reading, exercising memory, doing arts and crafts, or performing daily and structured physical activity. The practice of the above-mentioned activities supports the idea that establishing a daily routine

Having had COVID-19 was associated with a worsening of 54 % in cognition, which was likely related to the neurological impairment widely described at the clinical level (Tavares-Júnior et al., 2022). In contrast, other potentially related variables, such as the time spent reading, doing memory exercises, or using social networks online, showed no association with the cognitive function in our population.

Mood was not affected by any of the sociodemographic, health-related, or lifestyle variables included in this study, with only the baseline value of depressive mood influencing the change. Recent research found that the negative impact of the COVID-19 pandemic on mental health was lower in community-dwelling older adults than in younger adults (Pearman et al., 2021; Richardson et al., 2022). The economic stability derived from receiving a government pension may be a key factor in the emotional stability of older adults in Western countries. On the other hand, older adults often develop resilience throughout a lifetime of experiences, which further enables them to adopt proactive coping skills that help them deal with highly stressful events such as a pandemic. Personality, social and family support, and working to live a meaningful life are the main protective factors for resilience in the elders (Vazquez, 2019).

The most determining factors in the generated predictive models were the pre-pandemic values of each variable, so worse baseline measurements were predictive of proportionally greater worsening during the pandemic. This finding compels us to redouble our efforts in undertaking preventive and health promotion activities for the older population, regardless of their health status. As various studies have shown, individuals who are physically and mentally active exhibit better mental health and report better quality of life (Richardson et al., 2022), so measures must be implemented in a comprehensive way. ICTs and social media, whose use has increased during the period of confinement by about 15 % (Ammar et al., 2021), facilitate access to games or apps for physical and brain training at home. Therefore, these technologies appear to be useful tools to improve the effectiveness of interventions to promote active and healthy lifestyle habits.

The limitations of the study include a participation rate of approximately 45 %, which can result in underestimating the influence of some variables in the described models and therefore impact the study power. Participation was mainly affected by the social distancing imposed in the months following the onset of the COVID-19 pandemic, at the time the study was conducted, and by the isolation of vulnerable people that was self-imposed to a large extent. This could favor the presence of a selection bias of more proactive individuals or those committed to society. However, the sociodemographic characteristics and main outcomes at the baseline did not significantly differ between the included patients from the MEFAP trial and those who refused to participate.

Despite the long time elapsed between the baseline and post-pandemic interviews, which would per se justify a physical and mental decline of the participants, improvements have been observed in their physical function, cognition, and mood.

5. Conclusion

Confinement measures do not necessarily imply social isolation as long as an adequate degree of information and a high degree of social connection are maintained. New ICTs offer multiple tools aimed at promoting affective and social support networks. Both social-health services and society as a whole should promote healthy behaviors adapted to the older population that favor good physical and mental function.

Confinement due to the COVID-19 pandemic was not associated with a worsening of physical function, cognition, depressive mood, and quality of life in pre-frail elderly individuals over 70 years of age.

Declaration of competing interest

No potential conflict of interest by the authors.

Annex 1. Questionnaire about pandemic-related variables

Sociodemographic variables

Age
Gender
Marital status
  Single
  Married/unmarried couple
  Separated/divorced
  Widow/er
Economical level
  Think about your home monthly income. Do you think you make ends meet?
    Barely/extremely difficult.
    With difficulty.
    Quite well.
    Comfortably.
  Could you state what your total net income is in your home monthly? (Family monthly income in Euros).

Education level

Illiterate
Did not complete primary education
Primary education
Secondary education/Vocational training
University

Study variables

- Physical function. Short Physical Performance Battery (SPPB) by Guralnik. Score range 0–12 points.
  1- Balance (0–4 points)
  2- Gait speed (0–4 points)
  3- Getting out of the chair (0–4 points)
- Cognition. MEC by Lobo (0–30 points),
  1- Orientation
    What year is it?
    What season of the year is it?
    What day of the month is today?
    What month is it?
    What day of the week is today?
    Where are we?
    On what floor?
    In which city?
    In which province?
    In which country?

2- Fixing
   Repeat these three words: BALON BANDERA ARBOL (BALL FLAG TREE) (repeat until memorized)
3- Concentration and calculating
   If you have €30 and give me €3 at a time, how many do you have left every time?
4- Memory
   Do you remember the three words I told you before?
5- Language and construction.
   Show a pen and ask: What is this?
   Show a watch and ask: What is this?
   Repeat this sentence: "There were five dogs in a wheat field"
   Take this paper sheet with your right hand, fold it, and place it on the table
   Read this and do as it says: "CLOSE YOUR EYES".
   Write a sentence
6- Copy this drawing (pentagons)

- Depressive symptoms. Geriatric depression scale by Yesavage (1 point is given to "No" answers to questions 1, 5, 7, 11, 13 and to "Yes" answers to the remaining questions). (0–5 points = Normal. 6–9 points = Mild depression. ≥10 points = established depression).
  Choose the right answer about how you felt LAST WEEK (Yes/No)
  1- Are you basically satisfied with your life?
  2- Have you discontinued many of your activities and interests?
  3- Do you feel that your life is empty?
  4- Are you often bored?
  5- Are you in a good mood most of the time?
  6- Are you afraid that something bad is going to happen to you?
  7- Do you feel happy most of the time?
  8- Do you often feel helpless?
  9- Do you prefer to stay at home instead of going out and doing new things?
  10- Regarding your memory, do you feel that you have more issues than most people?
  11- At the moment, do you think it is wonderful to be alive?
  12- The way you feel right now, do you feel useless?
  13- Do you feel energetic?
  14- Do you feel that your situation is hopeless?
  15- Do you think that most people are better off than you??

- Quality of life. EuroQoL self-report of health condition (EQ-5D-3L) (visual analogue scale ranging 0–100).

- Social network during the pandemic:
  o Has a close person died during the pandemic?
  o Specify (couple, child, sibling, other…)
  o Has a close person been seriously ill?
  o Specify (couple, child, sibling, other…)
  o Number of co-habitants
  o Specify kinship of each
  o How many bedrooms are there in your home?
  o Do you have an open terrace or garden?
  o Did you discontinue seeing your children? (I do not have children or was not in touch with them before the pandemic/I discontinued seeing them/I have not seen them much/I have seen them sufficiently).
    o If you have seen your children, has your relationship been different (avoiding close contact, keeping safety distance, using a mask, keeping open windows)
  o Did you discontinue seeing your grandchildren? (I do not have grandchildren or was not in touch with them before the pandemic/ I discontinued seeing them/I have not seen them much/I have seen them sufficiently)
    o If you have seen your grandchildren, has your relationship been different (avoiding close contact, keeping safety distance, using a mask, keeping open windows)

o Have you continued your usual leisure activities? Completely abandoned them/less frequently/same as before the pandemic/ more than before the pandemic
o Have you discontinued your usual activities of social relations with friends, neighbors, or at the senior center? Completely abandoned them/less frequently/same as before the pandemic/more than before the pandemic
o Have you started new activities during the pandemic related to new technologies such as Whatsapp, video calls, e-mail, or others?
o Regarding reading of literature during the pandemic: I did not use to read books already before the pandemic/I have read less often/I have read the same/I have read more often.
o Regarding memory exercises, such as crosswords, wordsearch, sudokus, etc.: I did not use to spend time at doing memory exercises already before the pandemic/I have spent less time/I have spent the same time/I have spent more time.
o Regarding handcraft such as sewing, scale models, arts and crafts: I did not use to do crafts before the pandemic/I have spent less time/I have spent the same time/I have spent more time.
o Regarding time watching TV: I did not use to watch TV before the pandemic/I have spent less time/I have spent the same time/I have spent more time.

- Health-related variables during the pandemic:
  o Have you been infected with SARS-CoV-2?
    o If you have been infected, you were:
      ▪ asymptomatic or with mild symptoms at home.
      ▪ ill with severe symptoms at home
      ▪ hospitalized out of intensive care
      ▪ hospitalized in intensive care
    o If you suffered COVID-19, do you have any sequel at present?
  o Have you been isolated due to close contact with a COVID-19 case?
  o Have your chronic conditions worsened? No/a little/much/do not know, no answer.
  o Did you exercise during strict confinement (March to May of 2020)?
  o What exercises did you practice during strict confinement (March to May of 2020):
    o Walking around the house. For how long (in hours and minutes)?
    o Going up and down stairs. For how long (in hours and minutes)?
    o Stationary bike. For how long (in hours and minutes)?
    o Dancing. For how long (in hours and minutes)?
    o TV- or computer-directed exercises. For how long (in hours and minutes)?
    o Other (specify). For how long (in hours and minutes)?
  o Did you exercise from June 2020 until the present?
  o What exercises have you been practicing from June 2020?
    o Walking around the house. For how long (in hours and minutes)?
    o Going up and down stairs. For how long (in hours and minutes)?
    o Stationary bike. For how long (in hours and minutes)?
    o Dancing. For how long (in hours and minutes)?
    o TV- or computer-directed exercises. For how long (in hours and minutes)?
    o Other (specify). For how long (in hours and minutes)?

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