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ORIGINAL REPORT

SEVEN DOMAINS OF PERSISTING PROBLEMS AFTER HOSPITAL-TREATED COVID-19 INDICATE A NEED FOR A MULTIPROFESSIONAL REHABILITATION APPROACH

Lovisa HELLGREN, MSc[1], Richard LEVI, MD, PhD[2], Anestis DIVANOGLOU, PhD[2], Ulrika BIRBERG-THORNBERG, PhD[2] and Kersti SAMUELSSON, PhD[2]

From the [1]Department of Rehabilitation Medicine, Region Jönköping County, and Department of Medical and Health Sciences, Linköping University, Linköping, Sweden and [2]Department of Rehabilitation Medicine and Department of Medical and Health Sciences, Linköping University, Linköping, Sweden

Objectives: To identify domains of persisting problems at 4 months after discharge in patients previously hospitalized due to COVID-19, with a focus on a subgroup of patients reporting symptoms to an extent indicative of rehabilitation needs.
Design: Ambidirectional observational cohort study.
Patients: All patients with a laboratory-confirmed COVID-19 diagnosis admitted to hospital in a Swedish healthcare region during the period 1 March to 31 May 2020. After exclusion, 94% of all survivors ($n = 433$) participated in the study. Forty-three percent ($n = 185$) of these reported persisting problems indicating rehabilitation needs and formed a subgroup.
Methods: Explorative factor analysis based on results from comprehensive telephone interviews covering persisting symptoms, including assessment of impact on daily life.
Results: Seven domains were identified, comprising problems related to vision, cognition, mental fatigue, swallowing, voice, sensorimotor dysfunction, and feeling anxious/depressed. The patients in the subgroup reported a median of 8 symptoms/limitations affecting everyday life, and two-thirds reported symptoms/limitations in 3 or more domains.
Conclusion: Seven problem domains corresponding to specific modalities of rehabilitative interventions were identified. A majority of patients reported problems from several domains, indicating the need for multiprofessional teams in post-COVID-19 rehabilitation. Screening of patients previously hospitalized due to COVID-19 should cover all 7 domains of persisting problems.

LAY ABSTRACT
More than 70% of patients with COVID-19 have previously been shown to experience 1 or several of a multitude of persisting problems several months after infection. This study aimed to identify areas of persisting problems among a broad spectrum of self-reported problems. Survivors of COVID-19 who had been discharged from hospital 4 months previously participated in a telephone interview covering persisting problems, including assessment of impact on daily life. The persisting problems clustered into 7 functional areas. Mental fatigue, cognitive- and sensorimotor problems were reported most frequently. A potential rehabilitation need was seen in more than 40% of patients interviewed. These patients reported approximately 8 different problems affecting their everyday life, and a majority of these patients reported problems from 3 or more areas. These findings highlight the need for multiprofessional teams in post-COVID-19 rehabilitation. Screening of patients previously hospitalized due to COVID-19 should cover all 7 areas of persisting problems.

At least 70% of patients in the post-acute stage after COVID-19 have persisting symptoms (1). In addition to symptoms attributable to the respiratory tract, a wide array of other symptoms, e.g. fatigue, pain, cognitive impairment and anxiety, have been reported (1–3). The high prevalence and varied repertoire of persisting symptoms warrants sophisticated post-discharge screening for rehabilitation (4).

An adequate screening procedure should fulfil 2 major goals: *(i)* identify patients with persisting symptoms of such character and severity as to warrant further rehabilitation assessment and intervention; and *(ii)* serve as a decision basis for the staffing of post-COVID 19 rehabilitation teams. Furthermore, such screening should reflect the broad spectrum of problems hitherto identified (1), and should be concise enough to be applicable clinically for the assessment of large numbers of patients. It would therefore be useful to investigate whether problems cluster according to a

smaller number of domains, which could be used to guide the screening procedure.

The main objective of this study was to identify any domains of rehabilitation needs among persisting problems in a broad spectrum of self-reported symptoms/limitations in patients previously hospitalized due to COVID-19. The secondary objective was to identify the spectrum of such domains among a subgroup considered by an experienced rehabilitation team to warrant further rehabilitation assessment. This spectrum, once known, could then serve as a template for the corresponding competencies required in the set-up of optimal rehabilitation teams.

METHODS

This study is part of LinCoS, an ambidirectional observational cohort study covering the first wave of the pandemic (4). Reporting was informed by Strengthening the Reporting of Observational studies in Epidemiology (STROBE) statement for cohort studies (5). It was approved by the Swedish Ethical Review Authority (Dnr 2020-03029 and 202-04443).

Participants

LinCoS comprises all patients ($n = 734$) admitted to hospital due to COVID-19 in 1 of 21 Swedish health care regions (Region Östergötland), with a population of approximately 500,000 inhabitants, from 1 March to 31 May 2020. Due to ethical constraints, patients younger than 15 years were not included. After exclusion of fatalities, coincidental cases, and cases with pre-existing comorbidities so severe as to preclude post-COVID-19 rehabilitation, 433 of 460 survivors (94%) participated in a structured telephone interview 4 months after discharge. Based on interview results, a subgroup of 185 of the 433 patients were clinically evaluated as having concerning residual symptoms to an extent indicative of rehabilitation needs. The inclusion/exclusion process is shown in Fig. 1. The procedures for inclusion and exclusion, and patient background data, have been reported in detail previously (4).

Procedure

Telephone interviews were performed by experienced rehabilitation professionals 4 months after discharge from hospital (median 115 days; interquartile range 91–135 days). Interviews with foreign-language-speaking patients ($n = 72$, 17%) were conducted with professional interpreter support in real time. Interviews followed a standardized questionnaire (4) comprising 37 questions addressing symptoms and activity/participation limitations persisting after COVID-19. Answers followed the structure of affirmation or negation of the presence of a new and/or aggravated given symptom/limitation in relation to the hospitalization for COVID-19. For each affirmation, its impact on everyday life was estimated by the patient on a scale from 1 to 5 (1, no impact; 2, minor impact; 3, some impact; 4, high impact; 5, very high impact). Items assigned an impact of 3 or more were denoted as "affecting everyday life". Finally, patients were asked if they experienced any other new/aggravated symptoms/limitations, and any such additional problems were noted.
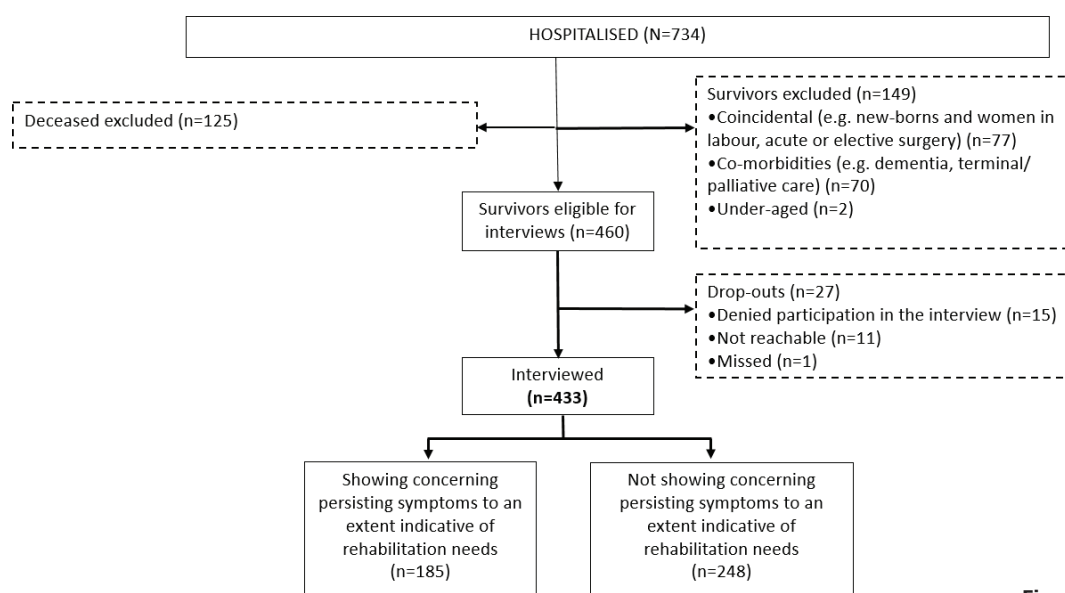

Fig. 1. Flowchart of inclusion.

Each interview in its entirety was evaluated by the interviewer in terms of indication of persisting rehabilitation needs. Interview, responses and evaluations were then discussed at team conferences attended by a multiprofessional rehabilitation team. The following aspects were taken into consideration: *(i)* presence of symptoms/limitations posing at least a moderate degree of impairment in activities of daily living; and *(ii)* presence of "alarming symptoms", i.e. symptoms, such as dysphagia, which may signal a risk of severe complications or even death. Based on scrutiny of the interview results and discussions between interviewer and team, 185 of the 433 patients were clinically evaluated as having concerning residual problems to an extent indicative of rehabilitation needs and were offered subsequent clinical assessments. The findings of these clinical assessments have been reported (6).

Patient and process descriptors

Basic patient descriptors, e.g. age, sex, comorbidities and premorbid level of function, and basic process descriptors, e.g. hospitalization duration and disease severity according to the World Health Organization (WHO) Clinical Progression Scale, (7) were obtained from medical records. A detailed account of these descriptors has been presented in a previous LinCoS report (4).

Statistical analysis

IBM SPSS Statistics 27 (IBM Corporation Armonk, New York, USA) was used for statistical analyses. Descriptive data are presented as means and standard deviations (SD) and as numbers and proportions of patients. A scale was used, with 0 indicating absence of a given item, and 1–5 indicating its impact on everyday life. The 0–5 scale was used in an exploratory factor analysis, with pairwise exclusion of cases when data were missing, using principal axis factoring with an oblique rotation to search for domains of symptoms (impairments and activity/participation limitations). To confirm the use of a factor analysis, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (0.928) and Bartlett's Test of Sphericity ($p = 0.000$) were used. Factors with an eigenvalue >1 and loadings of at least 0.3 were included and reported (8, 9). Identified items were included in the factor where it had the highest loading.

RESULTS

Pertinent patient and process descriptors for the whole group and for the subgroup are shown in Table I. Eighty-seven percent ($n = 375$) of subjects had at least 1 persisting symptom/limitation, with a median of

Table I. Background characteristics for all patients interviewed and the subgroup of patients reporting symptoms to an extent indicative of rehabilitation needs after COVID-19

	All patients interviewed ($n = 433$)	Patients in the subgroup ($n = 185$)
Age (years), mean (SD)	61 (17)	58 (14)
Sex, n (%)		
Men	246 (57)	104 (56)
Women	187 (43)	81 (44)
Employment status on admission to hospital, n (%)		
Working or studying	183 (42)	103 (56)
Retired	206 (48)	61 (33)
On sick leave	12 (3)	6 (3)
Out of work	23 (5)	10 (5)
Missing	9 (2)	5 (3)
Employment status at the time of interview, n (%)		
Working or studying	144 (33)	71 (38)
Retired	211 (49)	63 (34)
On sick leave	40 (9)	29 (16)
Out of work	29 (7)	16 (9)
Missing	9 (2)	6 (3)
New sick leave after hospitalization, n (%)	28 (15)*	23 (22)*
Days in hospital, mean (SD)	12 (19)	16 (24)
Intensive care unit needed, n (%)	68 (16)	49 (26)
Premorbid function category, n (%)†		
1	172 (40)	92 (50)
2	135 (31)	58 (31)
3	117 (27)	32 (17)
4	8 (2)	2 (1)
Missing	1 (0)	1 (1)
WHO Clinical Progression Scale, n (%)‡		
4	133 (31)	51 (28)
5	206 (48)	71 (38)
6	38 (9)	18 (10)
7	0 (0)	0 (0)
8	24 (6)	20 (11)
9	32 (7)	25 (14)

*Percentage of new sick leave was calculated on the number of patients who were working or studying on admission to hospital.

†Categories of premorbid function summarized in a modified version of the WHO/ECOG Performance Status(31) and the Frailty Score according to Rockwood (32): 1, no or mild frailty, no restriction in daily life; 2, moderate frailty, mobile and independent, but unable to handle physically demanding activities or work; 3, considerable frailty, ability to perform activities of daily living, but in periods confined to bed or chair; and 4, severe frailty, not able to perform activities of daily living and/or confined to bed or chair. Dementia necessitating care.

‡WHO Clinical Progression Scale: 4, hospitalized, moderate disease, no oxygen therapy; 5, hospitalized, moderate disease, oxygen by mask or nasal prongs; 6, hospitalized, severe diseases, oxygen by non-invasive ventilation or high flow; 7, hospitalized, severe diseases, intubation and mechanical ventilation, pO_2/FiO_2 ≥150 or SpO_2/FiO_2 ≥200; 8, hospitalized, severe diseases, mechanical ventilation pO_2/FiO_2 <150 (SpO_2/FiO_2 <200) or vasopressors; and 9, hospitalized, severe diseases, mechanical ventilation pO_2/FiO_2 <150 and vasopressors, dialysis, or extracorporeal membrane oxygenation.

WHO: World Health Organization; SD: standard deviation.

3 (interquartile range 0–8; range 0–33) symptoms/limitations significantly affecting everyday life (i.e. corresponding to 3–5 on the 5-point scale).

Two items were excluded from the factor analysis: "difficulty managing work/studies" because of a response rate below 50%, and "experienced falls after discharge" as this question did not specifically pertain to the situation at the time of the interview. Seven interviews were excluded from analysis; in 2 cases due to cognitive impairments precluding consistent responses,

Table II. Factor analysis on persisting symptoms persisting after COVID-19 with a cumulative explained variance of 60% (n=426)

Symptoms organized in factors (explained variance)	Factor 1 (36%)	Factor 2 (6%)	Factor 3 (4%)	Factor 4 (4%)	Factor 5 (4%)	Factor 6 (3%)	Factor 7 (3%)
Factor 1							
Photophobia	0.702						
Difficulty or discomfort when altering focus	0.572						
Blurred vision/double vision	0.505						
Difficulty reading	0.496						
Difficulty watching fast moving objects on TV	0.421					0.358	
Sensitivity to visual motion in busy environments	0.379						−0.328
Headache	0.371						
Factor 2							
Weakness/fatigability in arms/legs		0.686					
Difficulty walking >1 km		0.683					
Difficulty being physically active		0.672					
Muscular soreness/discomfort		0.490					
Difficulty driving a car/using public transport		0.475					
Difficulty performing personal hygiene and dressing		0.433					
Altered bodily sensations		0.431					
Factor 3							
Difficulty remembering			−0.675				
Word-finding difficulties			−0.671				
Mental slowness			−0.669				
Difficulty multitasking			−0.612				
Difficulty concentrating			−0.585				
Difficulty expressing thoughts when speaking			−0.58				
Difficulty participating in social activities			−0.363				
Increased sleep			−0.342				
Factor 4							
Feeling anxious				−0.624			
Feeling low/depressed				−0.51			
Factor 5							
Dysphagia					0.383		
Factor 6							
Dysphonia						0.55	
Dysarthria						0.53	
Difficulty understanding speech						0.347	
Factor 7							
Sleep less (≥2 h change)							−0.457
Phonophobia	0.319						−0.417
Stress sensitivity/irritability							−0.41
Mental fatigue		0.258					−0.406

Reported symptoms summarized as 7 factors by exploratory factor analysis, using principal axis factoring with an oblique rotation. Each symptom is included in the factor where it had the highest factor loading. Factor loadings ≥0.3 are shown.

and in 5 cases due to missing data. Thus, the factor analysis was based on 426 patients and 35 symptoms/limitations. The analysis yielded an explained variance of 60% including 7 factors, each with an eigenvalue >1 and a factor loading >0.3. The 7 factors and their corresponding symptoms/limitations are shown in Table II.

Three symptoms (giddiness, hearing loss and altered smell/taste) failed to fit the factor analysis, as neither yielded a factor loading ≥0.3. Odd symptoms reported in addition to those specifically asked for according to the interview guide included hair loss, menstrual disturbances, excessive sweating and feeling cold.

Results for the subgroup

The patients in the subgroup reported a median of 8 (interquartile range 4–14; range 1–33) persisting symptoms/limitations affecting everyday life, i.e. corresponding to 3–5 on the 5-point scale. Frequency of reported persisting symptoms/limitations in each factor, and reported symptoms not included in any factor are specified in Table III.

Two thirds (n=123, 66%) of this subgroup reported symptoms/limitations affecting everyday life in at least 3 domains (Table IV). Furthermore, more than 50% reported at least 1 persisting symptom/limitation included in factors 2, 3 and 7 affecting their everyday life. These 3 domains comprise sensorimotor symptoms and activities of daily life limitations; cognitive symptoms; and mental fatigue (Table V).

DISCUSSION

The factor analysis yielded an explained cumulative variance of 60% for the 7 identified domains of per-

Table III. Frequency of reported symptoms affecting everyday life after COVID-19 in patients (*n* = 183) reporting symptoms to an extent indicative of rehabilitation needs, organized according to factors including symptoms not included in any factor

	Number of patients answering the question	Number of patients reporting the symptom affecting everyday life* (%)
Factor 1		
Photophobia	178	30 (17)
Difficulty or discomfort when altering focus	178	15 (8)
Blurred vision/double vision	180	36 (20)
Difficulty reading	173	28 (16)
Difficulty watching fast moving objects on TV	178	21 (12)
Sensitivity to visual motion in busy environments	179	44 (25)
Headache	180	51 (28)
Factor 2		
Weakness/fatigability in arms/legs	180	104 (58)
Difficulty walking >1 km	174	70 (40)
Difficulty being physically active	179	115 (64)
Muscular soreness/discomfort	180	66 (37)
Difficulty driving a car/using public transport	159	21 (13)
Difficulty performing personal hygiene and dressing	174	20 (11)
Altered bodily sensations	179	26 (15)
Factor 3		
Difficulty remembering	180	73 (41)
Word finding difficulties	180	59 (33)
Mental slowness	180	60 (33)
Difficulty multitasking	180	59 (33)
Difficulty concentrating	180	75 (42)
Difficulty expressing thoughts when speaking	180	47 (26)
Difficulty participating in social activities	173	45 (26)
Increased sleep (>2 h difference)	174	25 (14)
Factor 4		
Feeling anxious	179	63 (35)
Feeling low/depressed	178	61 (34)
Factor 5		
Difficulty swallowing	160	21 (13)
Factor 6		
Dysphonia	169	38 (22)
Dysarthria	168	12 (7)
Difficulty understanding speech	176	23 (13)
Factor 7		
Sleep less (≥2 h change)	179	46 (26)
Phonophobia	179	48 (27)
Stress sensitivity/irritability	175	76 (43)
Mental fatigue	181	121 (69)
Symptoms not included in any factor		
Difficulty managing work/studies	91	38 (42)
Experienced falls after discharge	179	15 (8)
Giddiness	181	43 (24)
Hearing	178	26 (15)
Altered smell/taste	180	34 (19)

*Affecting everyday life corresponds to 3–5 (having some, high or very high impact) on a 5-point scale.

Table IV. Number of patients in a subgroup of patients reporting symptoms to an extent indicative of rehabilitation needs, reporting persisting symptoms after COVID-19 arranged into the number of factors according to the factor analysis

Number of factors corresponding to the reported symptoms	Number of patients reporting symptoms affected everyday life, *n* (%)
0	15 (8)
1	19 (10)
2	26 (14)
3	33 (18)
4	23 (13)
5	34 (19)
6	25 (14)
7	8 (4)

results underscore the need for post-discharge follow-up, including a sufficiently broad screening to cover the 7 domains as yielded by the factor analysis. A brief discussion relating to these domains, as they pertain to the subgroup with concerning persisting symptoms to an extent indicative of rehabilitation needs:

The first domain, comprising vision-related symptoms, showed the largest explained variance (36%). A high factor loading for the symptom "photophobia" indicates that it might be an important indicator for visual problems after COVID-19. Research reports of visual sequelae after COVID-19 are still rare. However, our findings are in agreement with previous reports of problems such as headache, visual impairment, sensitivity to light and reading-related difficulties after COVID-19 (10, 11). Almost half (49%) of subgroup patients reported at least 1 problem affecting every-

Table V. Number of persisting symptoms affecting everyday life in the subgroup of patients reporting symptoms to an extent indicative of rehabilitation needs according to the factors

	Number of patients reporting the symptom affecting everyday life (%)
Factor 1	
0 symptoms	92 (51)
1 symptom	35 (19)
2–3 symptoms	31 (17)
>3 symptoms	23 (13)
Factor 2	
0 symptoms	37 (20)
1 symptom	30 (17)
2–3 symptoms	67 (37)
>3 symptoms	48 (26)
Factor 3	
0 symptoms	70 (38)
1 symptom	23 (13)
2–3 symptoms	28 (15)
>3 symptoms	62 (34)
Factor 4	
0 symptoms	99 (55)
1 symptom	36 (20)
2 symptoms	44 (25)
Factor 6	
0 symptoms	130 (71)
1 symptom	37 (20)
2–3 symptoms	16 (9)
Factor 7	
0 symptoms	46 (25)
1 symptom	47 (26)
2–3 symptoms	75 (41)
>3 symptoms	15 (8)

sisting problems after COVID-19. These comprised problems related to vision, cognition, mental fatigue, swallowing, voice, sensorimotor dysfunction and feeling anxious/depressed. Most variables (i.e. symptoms or limitations) had a sufficient factor loading (r≥0.3) in just 1 factor, indicating a high intercorrelation of items within factors. The patients in the subgroup (*n* = 185) reported a wide range of symptoms, with 7 of 10 reporting problems in at least 3 of the 7 domains. These

day life from this domain, making visual assessment and subsequent intervention a relevant part of post-COVID-19 rehabilitation.

The second domain included sensorimotor symptoms and related problems in activities of daily life. Approximately 80% of subgroup patients reported at least 1 problem affecting everyday life from this domain. These findings are in agreement with several previous reports on such problems after COVID-19, e.g. muscle weakness, slowness of movement, tingling or numbness, and joint pain (2, 3, 12). Thus, rehabilitation after COVID-19 will frequently have to involve regaining physical functions, an important prerequisite for activity and participation.

The third domain comprised cognitive problems. Again, this finding is in concordance with previous reports of cognitive deficits (13). Almost two-thirds of subgroup patients reported at least 1 symptom from this domain affecting everyday life. Furthermore, one third of patients in the subgroup reported more than 3 different problems from this domain, reflecting a complex picture of cognitive symptoms. Thus, this study confirms that cognitive rehabilitation should be considered as a key component in post-COVID-19 rehabilitation. Mild cognitive deficits after an infectious disease cannot necessarily be captured by simple cognitive screening tests (14), and recent research indicates that cognitive deficits may easily be missed during a routine medical consultation (6). Therefore, a thorough and early neuropsychological assessment covering a wide range of cognitive functions seems to be indicated to guide post-COVID-19 rehabilitation.

The fourth domain comprised feeling anxious/depressed. Reported frequencies of symptoms of depression/anxiety in the general Swedish population during the first wave of the pandemic (22% and 28%, respectively) (15) are similar to the frequencies of approximately one-third of the patients in the subgroup reporting such problems. Thus, it may be that the psychological impact of COVID-19 could be due to factors such as social isolation (15–17), rather than due to a more direct effect of the infection. Regardless of cause, patients reporting feelings of anxiety and depression need to be further assessed as part of a holistic rehabilitation approach.

The fifth domain comprised dysphagia, which was reported to affect everyday life by 14% of subgroup patients. Due to the risk of complications, such as aspiration pneumonia, malnutrition and dehydration (18), it is important to identify and further address this problem when present.

The sixth domain included symptoms affecting the voice, most frequently dysphonia. New-onset dysphonia has been reported after COVID-19 with a wide array of possible causes, e.g. intubation or tracheostomy trauma, making a thorough assessment important (19).

The seventh domain included mental fatigue, phonophobia, stress sensitivity and disturbed sleep, all symptoms that have been reported to occur after infectious diseases of various aetiologies (20). Mental fatigue persisting several months after COVID-19 infection has been reported previously (21, 22) and, in this subgroup, it was the most frequently reported problem (69%). Thus, identification, assessment and management of mental fatigue is probably an important component in rehabilitation efforts after COVID-19.

These 7 domains can guide areas that need to be addressed in screening, and help define relevant professions involved in subsequent rehabilitation interventions. Besides sensorimotor problems affecting daily life (factor 2), the most frequently reported problems in the subgroup were cognitive symptoms (factor 3), such as mental slowness, difficulties remembering and concentrating, as well as stress sensitivity/irritability and mental fatigue (factor 7), and feeling anxious/depressed (factor 4). This picture is reminiscent of that frequently reported by patients and/or close relatives after an acquired brain injury (23). A previous study from LinCos showed that patients with severe disease who needed invasive ventilator support were at greater risk of reporting all symptoms included in factor 2, compared with those not requiring invasive ventilation. However, there were no corresponding differences between those groups for any of the symptoms included in factor 3, 4 or 7 (4). Thus, there may be varying causes for problems occurring in different domains, a suggestion in line with recent research on factors associated with recovery from different types of symptoms (24).

The important question pertaining to having difficulties managing work/studies was not applicable for a number of patients, i.e. those who did not work or study before COVID-19, primarily because they were of retirement age. However, for those in the subgroup for whom this question was eligible, more than 40% reported persisting difficulties 4 months after discharge from hospital. Furthermore, approximately 20% of subgroup patients ($n=23$, 22%) who were working prior to hospitalization, were on a sick leave at follow-up. Thus, for patients of working age, rehabilitation efforts have to include difficulties managing work.

The choice of questions in the interview guide was based on the relatively few early reports on post-COVID-19 symptoms extant at the time of this study, our clinical experience from other patient groups with persisting symptoms after infectious disease, and our own clinical experience of COVID-19 at that stage.

Subsequent reports (25–28) have corroborated that some of the symptoms resulting from our "any-other-symptom" question in this study, e.g. hair loss and dysautonomic symptoms, should also be considered in any screening follow-up.

Strengths of this study include the population-based approach, with a 94% inclusion rate among eligible cases, standardized interviews according to a detailed interview guide, and inclusion of patients speaking a foreign language (with real-time support of a professional interpreter). By choosing interviews, rather than a survey by letter or the internet, interviewees could be explicitly and repeatedly reminded to report only new/aggravated problems that developed after COVID-19. Questions included symptoms and activity/participation limitations. Furthermore, rather than asking for just enumeration of symptoms, questions included an estimation of the impact of each symptom on daily life.

Study limitations
Baseline/premorbid data were restricted to evaluation of medical records. Generalizability is limited by socio-economic and cultural differences across countries and regions, differences in degree of any rehabilitation received post-discharge, and the time-frame of the study that included only patients from the first wave of the pandemic. Self-reported data as a matter of course include the risk of over- and under-estimation of symptoms (29, 30).

CONCLUSION

Persisting symptoms and activity/participation limitations affecting everyday life after COVID-19 in a large proportion of the patients constitute a call for provision of post-discharge screening and adequate rehabilitation. The 7 domains identified reflect categories of symptoms/limitations of importance to cover in screening and in subsequent clinical assessment and interventions. A majority of patients in the subgroup reported problems in at least 3 domains, underscoring the need for multiprofessional rehabilitation teams. Most frequently reported domains were mental fatigue, cognitive dysfunction and sensorimotor symptoms, indicating the relevance of neurological rehabilitation in the context of post-COVID-19 syndrome, at least in previously hospitalized patients.

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