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Occupational Therapists and COVID-19 Pandemic: An Observational Survey in Europe

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Occupational Therapists and COVID-19 Pandemic: An Observational Survey in Europe

Abstract

Background: The COVID-19 pandemic has resulted in a health care emergency in Europe since the first wave in 2020. Several challenges have arisen for occupational therapists, as well as all the health care professionals. The aim of this study was to determine what occupational therapists have changed to adapt their therapeutic processes for this catastrophic situation.

Method: An online survey was developed and sent in conjunction with the Council of Occupational Therapy for European Countries (COTEC) to European national associations of occupational therapists.

Results: The study was based on a sample of 65 occupational therapists who worked with people with COVID-19. More than half of the occupational therapists (54.8%) had changed departments. The main needs patients expressed (n = 136) during hospitalization were to have social contacts (30.9%), and the main clinical complaints (n = 144) were motor impairment and fatigue (35.4%) and depression (25.7%). The most frequently reported goal (n = 141) was recovery of physical performance and fatigue management (32.6%). Among the emotions mentioned by occupational therapists, negative emotions (76%) were the most common.

Conclusion: European occupational therapists demonstrated flexibility and resilience to deal with clinical and organizational challenges during the COVID-19 emergency.

Comments

The authors declare that they have no competing financial, professional, or personal interest that might have influenced the performance or presentation of the work described in this manuscript.

Keywords

COVID-19, emergency care, occupational therapy, rehabilitation

Cover Page Footnote

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The coronavirus disease (COVID-19) is an infection caused by an acute respiratory syndrome linked to the exposure to coronavirus 2 (SARS-CoV-2). It was first reported on December 31, 2019. The pathogen SARS-CoV-2 and the resulting pathology have been studied from an early stage (Tang et al., 2020). Nevertheless, we do not yet fully understand the pathogenic effect of the disease, especially the long-term outcomes (Becker, 2020; Prescott & Girard, 2020). The SARS-CoV-2 virus has spread and is rapidly spreading worldwide; between March 2020 and November 2020, a peak of infected and hospitalized people with acute respiratory syndrome was reported in Europe. The World Health Organization declared COVID-19 a pandemic on March 11, 2020 (Callaway, 2020). Pandemic waves such as this represent a severe problem for public health because of the limited capacity of health care systems to cope with the health emergency strictly connected to the coronavirus (Palacios Cruz et al., 2021). When a health crisis occurs, individuals, families, communities, institutions, and society are limited in their ability to carry out normal daily activities; therefore, they are more vulnerable. In this scenario, environmental barriers (the inability of family members to enter hospitals), social barriers (the inability to participate in the usual social roles), and the threat of personal and financial losses lead to psychological reactions, including fear, impotence, and loss of trust (Parente et al., 2017).

Occupational therapists could play a key role in this scenario by improving the effectiveness of emergency response and promoting health care and recovery. During the first pandemic wave, Hewitt and colleagues (2020) analyzed how the standard occupational therapy (OT) process was being modified to cope with the increased number of hospital accesses of frail people who were also positive for COVID-19. The primary objectives of our study were to investigate (a) the working conditions of European occupational therapists in acute hospital settings during the COVID-19 pandemic, (b) the process of OT during the emergency (patient expectations, occupational therapist evaluations, treatment targets, treatment procedures) and, (c) occupational therapists' feelings and emotions during the pandemic. The results of this research are vitally important to reflect on the role played by occupational therapists during a health emergency; moreover, the results can lead us to practical reflections on actual and future pandemic waves.

Over the last few years, occupational therapists have assisted during a significant number of natural disasters all over the globe, such as tornadoes, earthquakes, and currently, the COVID-19 pandemic. These are different, major, adverse events that share the need for implementation of substantial response phases that involve society as a whole, especially health care professionals and, therefore, occupational therapists. There are heterogeneous studies that describe the role of OT during worldwide emergencies and disasters. Parente et al. (2017) conducted a literature review of 10 articles and found that almost all referred to environmental disasters, such as earthquakes. One study published while this article was being written examined the perspectives of allied health care professionals working in the emergency wards of two hospitals in the Netherlands (van Oorsouw et al., 2020). The study described the experiences and ethical dilemmas of dieticians, physical therapists, speech-language therapists, and occupational therapists working at the emergency wards during the first COVID-19 wave. The study found that to diminish the long-lasting negative impacts of the COVID-19 pandemic and moral distress, employers should empathize with the experiences of allied health professionals and create conditions for ethical reflection. The results also showed that allied health professionals value professional autonomy; room for professional autonomy makes them feel needed, connected, and energized. However, the study noted that the needs of allied health professionals might conflict with organizational rules and structures. While this article led to some valid conclusions for a pandemic situation (the presence of an interdisciplinary rehabilitation team expert in emergencies, the

need for a rapid and timely approach to rehabilitation to prevent sequelae of disability), it did not clarify the role of occupational therapists during this pandemic.

A second review focusing on natural disasters highlighted the need to integrate rehabilitation into disaster management planning by underlying the importance of infrastructure and adequate financial investments (Khan et al., 2015). Until 2020, no study had yet explored in detail the implications of a pandemic on the clinical practice of OT, nor had a plan of preparation and response been studied specifically for this profession.

Considering the literature strictly related to the rehabilitation of people positive for SARS-CoV-2, a large number of scientific articles are available. However, the profession of OT is not the focus. Greenhalgh et al. (2020) reported that multicomponent rehabilitation intervention is important for taking charge of respiratory symptoms, fatigue, neurological problems, frailty, and pain by citing the occupational therapist as a necessary rehabilitation professional. However, the study provided no ideas about the therapeutic process in OT. Natural disasters could have a potentially devastating impact on older people, who are especially prone to complex medical issues and cognitive problems. As is well known, the population hospitalized for SARS-CoV-2 pneumonia often have clinical histories characterized by co-morbidity and frailty (Hägg et al., 2020), leading to fewer results in terms of the rehabilitation process (Bellelli et al., 2020). Studies of this hospitalized population with multi-comorbidity related to OT showed that rehabilitation of people affected by delirium can help to reduce the number of days of delirium and increase positive outcomes (Pozzi, Lanzoni, Groff, et al., 2020; Pozzi, Lanzoni, Lucchi, et al., 2020; Pozzi, Tatzer, et al., 2020).

Dementia was found to be a common comorbidity for hospitalized SARS-CoV-2 patients. OT could potentially be useful for the care of hospitalized people affected by COVID-19, where the symptoms analyzed are serious respiratory problems, musculoskeletal deficits, and neurological deficits leading to cognitive problems (Feldstein et al., 2020). Some authors reported that rehabilitation increased the possibility of preventing and reducing behavioral disorders and increased occupational and motor performance of people with dementia (Livingston et al., 2017). ICU care has been one of the therapeutic possibilities in the most severe cases (European Centre for Disease Prevention and Control, 2021). Also, in the case of COVID-19, OT can lead to an increase in treatment standards both in the evaluation phase and in the implementation of occupational performance-directed treatments (Álvarez et al., 2017; Pozzi, Lanzoni, et al., 2020). Moreover, there is sufficient evidence that OT is a relevant intervention for reducing immobility in the ICU (Devlin et al., 2018; Schweickert et al., 2009; Tipping et al., 2017). In addition, the necessary interdisciplinary approach in the treatment of complex diseases (Herridge et al., 2011; Needham et al., 2012) leads us to consider OT as a relevant profession that is useful for the rehabilitation of COVID-19 patients.

These considerations suggest that it is important to get insight into how occupational therapists acted and what therapeutic process they were able to implement during the COVID-19 pandemic. Investigating how occupational therapists acted during pandemic peaks and how they managed to adapt to this emergency in Europe could be essential for planning future responses to this type of disaster.

Method

Inclusion Criteria

The inclusion criteria were occupational therapists registered to European national associations. The link for a survey was sent to the Council of Occupational Therapists for the European Countries (COTEC), which, in turn, sent the link to the European national associations through media channels (email, Twitter).

Design

A quantitative descriptive research study was performed using a self-administered standardized survey to collect data from the occupational therapists on how they acted during pandemic peaks and how they managed to adapt to this emergency in Europe. A group of European OT researchers created the survey. The authors of this article carried out pilot tests on the survey. The survey analyzed the different steps of the OT process: assessment, treatment goals, and therapeutic procedures. Experienced researchers with different professional qualifications, such as sociologists, geriatricians, and expertise in statistics, reviewed the survey.

Ethics

Each survey participant received and accepted an informed consent. The data collected was treated according to the principles of fairness, accuracy, time limitation of storage, integrity, and confidentiality. Data collected were encrypted and anonymized. Only researchers involved in the project had access to the raw data.

Primary Research Questions

Three primary research questions were established:

1. What were the working conditions of occupational therapists during the COVID-19 pandemic first wave in institutes (hospital wards and rehabilitation centers) in Europe.
2. What were the patient expectations, occupational therapist evaluations, treatment targets, and treatment procedures of occupational therapists working during the COVID-19 pandemic first wave in institutes (hospital wards and rehabilitation centers) in Europe.
3. What were the feelings and emotions of occupational therapists working during the COVID-19 pandemic in institutes (hospital wards and rehabilitation centers) in Europe.

Participants and Procedure

The questionnaires were collected from April to June 2020 during the first wave of COVID-19 in Europe, making them particularly relevant to understanding the more immediate impact of the COVID-19 pandemic on rehabilitation work in short- and medium-term care.

Instrument

A comprehensive questionnaire was developed that consisted of 29 questions and four statements focusing on general data: OT and people with COVID-19, the OT process with people with COVID-19, personal protective equipment, and subjective perception of the occupational therapist (see Appendix). Responses to all questions were categorized. The possibility to provide some narrative comments to many questions was also included.

The questionnaire was distributed by mail in collaboration with the Council of Occupational Therapists for European Countries. The mail contained a link to an online version of the survey developed with Google Forms. Participation in the survey was voluntary, and the forms were returned anonymously. The form was open from April to June 2020.

Data Analysis

The data were analyzed by descriptive statistics. The responses were collected in an Excel® file (Microsoft Office 2016). The dataset was checked and analyzed with the statistical software STATA® 14.2. The closed answer questions allowed the participants to select one and, in some cases, multiple answers. The number of responses produced by the sample ($n = 65$) is reported in the descriptive tables. The open-ended questions were analyzed by thematic content analysis and categorized by the researchers. The responses concerning emotions were categorized according to the classification of Hua et al. (Xu et al., 2015). The answers were then analyzed through descriptive statistics, such as mean, *SD*, absolute frequency, relative frequency, and relative frequency (%). Missing data are also reported in the tables (see Table 1).

Results

We collected 211 questionnaires, of which 192 were answered by occupational therapists (91%). Of these 192 occupational therapists, 43% ($n = 65$) reported working with patients with COVID-19 and were included in the study.

Table 1 presents the demographic characteristics of the participating occupational therapists who worked with patients with COVID-19. The majority were from the UK (43.1%), and the others were from different European countries. All of the participants had a bachelor's degree in OT, and eight of these (12.3%) also had a Master of Science Degree. The average clinical experience of the participants was 12.27 years ($SD = 8.82$); for most of the participants (63%), the experience was less than 17 years. The occupational therapists involved worked mainly in neurology (29.2%), geriatrics (27.7%), and other unspecified fields (21.5%).

Table 1
Characteristics of Participants

Characteristics	Total N = 65 (100%)
Country where you work as an occupational therapist	
UK	28 (43.1%)
Switzerland	10 (15.4%)
Belgium	7 (10.8%)
Italy	6 (9.2%)
Ireland	5 (7.7%)
The Netherlands	3 (4.6%)
Other EU	6 (9.2%)
Degree	
Bachelor's	65 (100%)
Master of Science	8 (12.3%)
Years of experience in OT	
Mean (SD), years	12.27 (8.82)
Years of experience in OT	
0 > 6 years	19 (29.2%)
7 > 16 years	22 (33.8%)
17 > 40 years	24 (36.9%)
Which ward of your acute hospital do you work during the COVID-19 pandemic?	
Neurology	19 (29.2%)
Geriatrics	18 (27.7%)
Intensive care unit	8 (12.3%)
Internal medicine	6 (9.2%)
Other	14 (21.5%)

Table 2 shows the occupational therapists' working conditions during the COVID-19 emergency. All of the participants ($N = 65$) reported having worked on average 34.11 hr ($SD = 8.64$) per week. Compared to the conditions prior to the pandemic, the average working hours were, in most cases, unchanged (64.6%). In some cases, the hours increased (29.2%). In a few other cases, the hours decreased (6.1%). More than half of the participants (54.8%) changed departments. Most of the occupational therapists (70.8%) reported having changed functions. Almost all reported adopting personal protective equipment (PPE) during their activities. Forty-four (67.7%) of the occupational therapists reported the devices were adequate, 16 (24.6%) reported the devices were inadequate (24.6%), and five (7.7%) reported they did not receive PPE.

Table 2
Working Conditions

What are the working conditions of the occupational therapist during the COVID-19 emergency?	Total n = 65 (100%)
During this emergency, how many hours per week are you working? Mean (<i>SD</i>), hours	34.11 (8.64)
Your working hours compared to before the emergency are:	42 (64.9%)
Unchanged	19 (29.2%)
Increased	4 (6.2%)
Decreased	
Did you change ward/department due to COVID-19?	35 (54.8%)
Yes	28 (45.1%)
No	2 (3.1%)
Other answer	
Have your functions changed in your hospital or center?	46 (70.8%)
Yes	19 (29.2%)
No	
For you, at your center, do you have the appropriate personal protective equipment?	44 (67.7%)
Yes	16 (24.6%)
Yes, but insufficient for all	5 (7.7%)
No	

Table 3 shows the changes in the OT process during the COVID-19 pandemic emergency. The mean age of treated COVID-19 patients was 64.75 years ($SD = 16.53$). The primary needs patients expressed ($n = 136$) during hospitalization and which were reported by occupational therapists were to have social contacts (30.9%), to return home early (19.1%), and to feel and breathe better (18.4%). The performance limitations detected by the occupational therapists during the clinical evaluation ($n = 144$) were motor and fatigue impairment (35.4%), depression and anxiety (25.7%), and cognitive impairment and delirium (20.1%). The reported OT treatment goals ($n = 141$) included work to increase physical performance and fatigue management (32.6%), targeted work on basic activities of daily living (B/ADLs) (20.6%), and work on cognitive stimulation (14.2%). The equipment used ($n = 104$) by the therapists was multiple ($n = 104$) and mainly included materials for motor training (34.6%), objects for ADLs (31.7%), and materials for cognitive training (10.6%). No special equipment needs (55.4%) were reported by the OT ($n = 65$) to conduct their work.

Table 3
The Process in OT

The process in OT during the COVID-19 pandemic emergency	Total absolute frequency; relative frequency (%)
Average age of patients with COVID-19 that you have been treating or you are treating now (n = 65) Mean (<i>SD</i>), age	64.75 (6.53)
People's expectations (n = 136) (What needs and wishes did COVID patients in hospital express to you during their hospital stay during the first few sessions?)	
Social contact	42 (30.9%)
Go home	26 (19.1%)
Feel and breath better	25 (18.4%)
Motor skills rehabilitation	16 (11.8%)
B/ADL rehabilitation	15 (11.0%)
Comfort and resilience	8 (5.9%)
Leisure activities	4 (2.9%)

Limitations found during the evaluation (n = 144)

(During the COVID-19 emergency what are the most important limitations in performance skills [e.g., motor, sensory, cognitive, emotional, etc.] that you observed most in people under treatment?)

Motor impairment and fatigue	51 (35.4%)
Depression and anxiety	37 (25.7%)
Cognitive impairment and delirium	29 (20.1%)
Breathing	16 (11.1%)
Sensory impairment	6 (4.2%)
End of life	5 (3.5%)

Goals in OT treatment (n = 141)

(What goals have you tried to achieve in your OT interventions with patients with COVID-19?

Please describe briefly each goal)

Improve physical performance	36 (25.5%)
Independence B/ADL	27 (19.1%)
Promote social contact	19 (13.5%)
Survive and manage breath	15 (10.6%)
Reduce PTSD	15 (10.6%)
Improve cognitive performance and reduce impact of delirium	8 (5.7%)
Independence I/ADL	8 (5.7%)
Other	13 (9.2%)

Intervention in OT to achieve objectives (n = 141)

(What intervention have you performed with COVID-19 patients? Please describe briefly each procedure)

Improving physical skills and fatigue management	46 (32.6%)
Training B/ADL	29 (20.6%)
Cognitive stimulation	20 (14.2%)
Relaxing techniques, meditation, conversation	19 (13.5%)
Planning discharge	11 (7.8%)
Management PPE and aids	9 (6.4%)
Training I/ADL	7 (5.0%)

Aids used (n = 104)

(What equipment/aids have you used?)

Motor training materials	36 (34.6%)
ADL objects	33 (31.7%)
Cognitive training materials	11 (10.6%)
Specific tools for acute respiratory infection	8 (7.7%)
Electronic devices	8 (7.7%)
Missing data	8 (7.7%)

Missing Aids

(Did you miss any equipment/aids to carry out your OT in the best possible way?)

No	36 (55.4%)
Rehabilitation tools	13 (20.0%)
PPE for patients or operators	8 (12.3%)
Electronic device	3 (4.6%)
Yes, but not specified	2 (3.1%)
Missing data	3 (4.6%)

Table 4 reports the occupational therapists' emotions and perceptions during the COVID-19 pandemic. On a scale of 1 (*very little*) to 10 (*so much*), most occupational therapists felt effective (mean = 7.23; *SD* = 2.37) in their intervention during the COVID-19 emergency. During the emergency, the personal and professional factors (n = 134) reported as essential for OT consisted of soft (53%), hard (22.4%), and multi-professional (13.4 %) skills. All interpersonal factors, such as personality traits, communication skills, motivation, etc., were grouped in soft skills, while all the technical-clinical factors were categorized as hard skills. The skills the occupational therapists reported that were lacking (n = 72) were related to the lack of knowledge of the pathology under discussion (43.1%) and, to a lesser extent, related to the lack of some soft (16.7%) and hard (8.3%) skills. In some cases, the participants replied that no skills were lacking (22.2%). Emotions reported were numerous (n = 171). Negative emotions (76%) were the most present; emotions related to fear (33.9%), distress

(32.2%), anger (5.8%), and disgust (4.1%) were reported. Positive emotions reported (22.2%) were feeling joyful (12.3%) and fond (9.9%). Neutral emotions were also present (1.2%).

Table 4*The Occupational Therapist's Emotions*

The occupational therapist's emotions and perception during the pandemic	Total absolute frequency; relative frequency (%)
From 1 (very little) to 10 (very much) how effective did you feel in applying OT during the COVID-19 emergency? (n = 65) Mean (SD), score	7.23 (2.37)
During the COVID-19 emergency, what were your personal or professional factors that were essential to carry out OT in the hospital? (n = 134)	
Soft skills	71 (53.0%)
Hard skills	30 (22.4%)
Multi-professional skills in teamwork	18 (13.4%)
Nothing	4 (3.0%)
Missing data	2 (0.0%)
During the emergency, what skills/competencies did you feel you did not have? (n = 72)	
Clinical knowledge related to COVID-19	31 (43.1%)
Nothing	16 (22.2%)
Personal soft skills	12 (16.7%)
Hard skills	6 (8.3%)
Skills in intensive care	4 (5.6%)
Missing data	3 (4.2%)
During the COVID-19 emergency, what were the emotions/feelings you felt? (n = 171)	
NEGATIVE EMOTIONS	130 (76%)
Fearful (panic, frightened, shy)	58 (33.9%)
Distressed (sad, disappointed, guilty, missed)	55 (32.2%)
Angry	10 (5.8%)
Disgusted/Dissatisfied (annoyed, doubtful, hateful)	7 (4.1%)
Surprised	0 (0%)
POSITIVE EMOTIONS	38 (22.2%)
Joyful (calm, happy)	21 (12.3%)
Fond (favored, trustful, praiseful, wishful)	17 (9.9%)
NEUTRAL EMOTIONS	2 (1.2%)
Missing data	1 (0.6%)

Discussion

This survey enabled the collection of relevant information on occupational therapists who worked with COVID-19 patients. This information concerns patient expectations, assessments performed by occupational therapists, rehabilitation procedures, and emotions.

The COVID-19 pandemic has radically changed work habits and routines, particularly among the health professions. Spoorthy et al. (2020) confirmed that occupational therapists also had to adapt their daily practices to meet the new organizational needs in the acute setting. The fact that over two-thirds of the occupational therapists in this study experienced a change of work functions and that about half have also changed departments (54.8%) reinforces the conclusion that psychological flexibility for health care workers is a crucial skill for deploying adaptive coping responses during a pandemic (Dawson & Golijani-Moghaddam, 2020).

Regarding the rehabilitation processes implemented, about one-third (30.9%) of the occupational therapists interviewed reported that their patients' primary goal was to recover social contacts during hospitalization. Therefore, we would have expected the reacquisition of this crucial social participation to be a priority goal among the objectives of the OT process. However, only 13.5% of the occupational therapists mentioned promoting social contacts as a main objective. Other objectives, such as to improve physical performance (25.5%) and independence in B/ADLs (19.1%),

were more common. Client-centered practice proved to be a crucial, shared approach in OT treatment (Conneeley, 2004). However, this study proves that in clinical practice, a gap could arise between occupational therapists' perceptions and clients' perceptions of active participation and involvement in decisions, as previous studies have suggested (Maitra & Erway, 2006).

The primary purpose of OT is to enable individuals to participate in self-care, work, and leisure activities that they want or need to perform. In our study, we found that the treatment directed to the physical abilities of patients was accounted for more than the focus on treating impairments in ADLs performance, although addressing ADLs is a more standard approach for occupational therapists (Hammond, 2004). The relevance of this bottom-up training emerges even more so when considering that over a third of the cases required motor training tools.

This result is partially understandable when we consider the impairments observed in people with COVID-19. In the evaluation of the occupational therapist, it was indicated that 35.4% of the sample of COVID-19 patients suffered from motor impairment and fatigue, 25.7% suffered from depression and anxiety symptoms, and 20.1% had cognitive impairment and delirium. It is, therefore, plausible that in the emergency phase, the occupational therapists focused their interventions more on physical and cognitive difficulties. Unfortunately, our questionnaire did not allow us to know how much the rehabilitation work of the occupational therapist was focused on occupations and activities. The scientific literature concerning the feasibility of OT treatment for people with physical and cognitive impairment based on occupations and activities is abundant (Kim et al., 2012; Smallfield & Heckenlaible, 2017). Moreover, the role of OT in the treatment and prevention of delirium (Morandi et al., 2019; C. Pozzi, Tatzer, et al., 2020) would add opportunities and value to occupational therapists treating COVID-19 patients with cognitive impairments and delirium.

Further analysis should be carried out on how European universities are adapting the core competencies of the bachelor's and master's degrees in OT to these new experiences and discoveries. Teaching the techniques related to the management of fatigue and motor impairment was already considered to be useful and effective in cases of chronic diseases (Cox, 2000). These techniques proved useful during this pandemic for 32.6% of the sample of occupational therapists. This suggests these techniques should be considered when developing the university teaching curriculum.

In addition, the analysis of emotions that occupational therapists reported in our survey is of great interest. We found that negative emotions, such as fear, worry, panic, or even feeling disgusted or angry, were present in 76.0% of the occupational therapists in our study. In contrast, positive emotions, such as feeling fond, joyful, or trustful, were reported by only 22.2% of the participants. Other health care professionals also often reported frequently feeling negative emotions (Spoorthy et al., 2020).

The limitation of this study is that the data collected are affected by bias because of the small size and non-representativeness of the sample. However, this study is particularly relevant because it examined extensively, for the first time, the impact of a pandemic on the work processes of occupational therapists. This study is important because it gives insight into the challenges occupational therapists have faced across Europe.

Conclusion

This study highlighted some of the rehabilitation procedures implemented by occupational therapists during the catastrophic COVID-19 pandemic in Europe. This paper confirms that these professionals have also suffered from the stressful work and personal consequences of the pandemic, like all other health care workers. Despite the situation, however, it was shown that occupational therapists managed to carry out some important tasks in mitigating the damage and disability induced by hospitalization and illness of COVID-19 patients.

The study reports some significant areas of work on which occupational therapists already focus when treating COVID-19 patients, such as the management of fatigue. It also highlights some areas for future research, such as the care for older adults with delirium. The data also indicates how crucial it is to keep the focus on client-centered interventions as much as possible, as indicated by the professional framework.

This research provided interesting data to inform researchers, students, and therapists. It also informs managers and service providers about the procedures carried out during the COVID-19 pandemic and allows them to compare their practices with those of others. This information may also be useful to universities in planning the curriculum for OT education, as particular skills have been highlighted as important during the pandemic.

As practice has shown, occupational therapists can also significantly contribute to reducing the destructive effects of the pandemic. The future challenges of humanity also await these professionals who must capitalize on the experience accumulated to be even more incisive.

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Appendix Survey Used in the Study

Section 1 – Introduction

- **Email address collection**
- **Unique code collection**

Section 2 – Occupational Therapy and Hospital

- **Question:** “Are you an occupational therapist and [do] you currently work in hospital, clinic, or rehabilitation hospital?” – [**Dichotomous response:** yes/no].

Section 3 – Occupational Therapy and COVID-19

- **Question:** “In your hospital, have you ever treated people with COVID-19 or are you currently doing it?” – [**Dichotomous response:** yes/no].

Section 4 – First Part: Description

- **Question:** “Country where you work as an occupational therapist” [**Open answer**].
- **Question:** “Region /district where you work as an occupational therapist (ex. Emilia-Romagna, Bavaria)” [**Open answer**].
- **Question:** “Your degree” [**Categorical response:** bachelor/master of science/PhD/other].
- **Question:** “Years of experience in occupational therapy” [**Numerical response**].
- **Question:** “What setting were you in before the coronavirus emergency?” [**Categorical response:** acute hospital/primary care/rehabilitation hospital/hospital home services/other].
- **Question:** “Which ward of your hospital do you work in? (where you work mainly)” [**Categorical response:** internal medicine/geriatrics/neurology/cardiology/intensive care/pneumology/other].
- **Question:** “Did you change ward/department due to COVID-19?” [**Dichotomous response:** yes/no].
- **Question:** “During this emergency, how many hours-per-week are you working?” [**Numerical response**].
- **Question:** “Your working hours compared to before the emergency are:” [**Categorical response:** increase/unchanged/decreased].
- **Question:** “Have your functions changed within your hospital or center?” [**Dichotomous response:** yes/no].

Section 5 – Second Part: Occupational Therapy and People with COVID-19

- **Question:** “Approximately how many days ago did the first COVID patient arrive at your hospital or center?” [**Open answer**].
- **Question:** “Total number of covid patients that you have seen to date (approximately)” [**Open answer**].
- **Question:** “Average age of patients with COVID-19 that you have been treating or are treating right now” [**Open answer**].

Section 6 – Third Part: The Occupational Therapy Process with People with COVID-19

- **Question:** “What needs and wishes did COVID patients in hospital express to you during their hospital stay during the first few sessions? (max three needs or wishes, the most common)” [**Open answer**].
- **Question:** “During the COVID-19 emergency, what are the most important limitations in performance skills (e.g., motor, sensory, cognitive, emotional, etc.) that you observed most in people under treatment? (max three limitations)” [**Open answer**].
- **Question:** “What goals have you tried to achieve in your professional practice as and occupational therapist with patients with COVID-19? Please describe briefly each goal (max five goals)” [**Open answer**].
- **Question:** “What intervention have you performed with COVID-19 patients? Please describe briefly each procedure (max five interventions)” [**Open answer**].
- **Question:** “What equipment/aids have you used? [max five equipment / aids]” [**Open answer**].
- **Question:** “Had you used this equipment/aids before this emergency?” [**Categorical response:** yes/no/other].
- **Question:** “Did you miss any equipment/aids to carry out your OT in the best possible way?” [**Open answer**].
- **Question:** “From 1 (*very little*) to 10 (*very much*) how effective did you feel in applying occupational therapy during the COVID-19 emergency?” [**Numeric response**].

Section 7 – Last Part: Personal Protective Equipment and Subjective Perception of the Occupational Therapist

- **Question:** “During the COVID-19 emergency, what personal protective equipment did you have to protect yourself against infection?” [**Open answer**].
- **Question:** “For you, at your center, do you have the appropriate personal protective equipment?” [**Categorical response:** yes/no/yes but insufficient for all staff].
- **Question:** “From 1 to 10, how much do you feel or did you feel vector of contagion propagation?” [**Numeric response**].
- **Question:** “During the emergency, what skills/competencies did you feel you didn't have? (max three skills)” [**Open answer**].
- **Question:** “During the COVID-19 emergency, what were your personal or professional factors that were essential to carry out occupational therapy in the hospital? (max five personal or professional factors)” [**Open answer**].
- **Question:** “During the COVID-19 emergency, what are the emotions/feelings you felt? (max five emotions/feelings)” [**Open answer**].