

Multicare_COV 19: Prospective single-center study on the effectiveness of multidisciplinary medical-psychological support on anxiety, depression, and stress outcomes in caregivers of COVID-19 patients

Tineri M¹, Evangelista L¹, Parente S¹, Angius G¹, Mormile M¹, Massimiani B¹, Mapfumo M¹, Fiorucci C², Lucini M¹, Cafariello C² and Ciervo U¹

¹Palliative Care Unit, Italian Hospital Group, Guidonia, Rome, Italy

²Covid-19 Unit, Italian Hospital Group, Guidonia, Rome, Italy

*Correspondence

Marco Tineri

Palliative Care Unit, Italian hospital Group, Guidonia, Rome, Italy

Tel: +39 0774-386683

E-mail: mtineri@italianhospitalgroup.it

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Abstract

The MULTICARE_COV-19 prospective experimental single-center study was expected to demonstrate whether remote access to a psychologist, in support of the physician in charge, could change the emotional impact of hospitalization both on caregivers, unable to take care of their family members, and on patients, by improving their perception of hospitalization and lessening their levels of anxiety, depression, and stress.

Introduction

The outbreak of a novel form of coronavirus in China (Wuhan region) has created a confusing and rapidly evolving situation, in a historical context in which the incidence of mental illness has significantly increased [1]. It is no surprise that the British media have immediately highlighted a substantial psychological impact of both the epidemic and the response of the Chinese population [2].

All over the world, the Covid-19 pandemic has produced a high and enduring level of psychosocial stress among individuals and families and it has become a health emergency posing huge challenges to governments, companies, and the overall population [3].

Given the ongoing social distancing and lockdown rules, families still have to face a number of issues, e.g., working remotely in an effective way without childcare support, educating children at home, and preventing the transmission of diseases. They also have other sources of short- and long-term concern, e.g., implications of job loss, food, and home insecurity, and worries about children's learning and mental health [4]. A study by Wang et al. [5] showed that, during the initial phase of the epidemic in China, one third of interviewees reported a state of anxiety ranging from moderate to severe. Furthermore, variables such as female gender, student status, and specific physical symptoms were associated with a higher psychological impact of the epidemic and higher levels of stress, anxiety, and depression. However, receiving more up-to-date and accurate health information, as well as learning about precautionary measures were associated with a lower psychological impact of the epidemic and lower levels of stress, anxiety, and depression [5]

It is in view of these considerations that we undertook the research work described in this paper. In other words, we planned to investigate if regular multidisciplinary telephone interviews, conducted by psychologists and physicians, could bring about changes in the emotional activation and levels of anxiety, stress, and depression that caregivers of hospitalized Covid-19 patients experience.

Aims

The study was focused only on caregivers of patients hospitalized in our Covid-19 unit. The MULTICARE_COV-19 prospective experimental single-center study was expected to demonstrate whether remote access to a psychologist, in support of the physician in charge, could change the emotional impact of hospitalization both on caregivers, unable to take care of their family members, and on patients, by improving their perception of hospitalization and lessening their levels of anxiety, depression, and stress.

Materials and methods

The study was conducted on caregivers of patients admitted to our Covid-19 unit, after obtaining their consent and information for our study.

Twenty-two of them qualified under our inclusion criteria (Table 1). The caregivers were contacted by telephone on a weekly basis throughout the period of hospitalization of their family members. During the telephone calls, they received information on the progress of the treatment from our physician in charge and benefited from psychotherapeutic support for emotional management. The DASS 21 test, validated in Italian [5] and consisting of 21 items, enabled us to assess depression, anxiety, and stress symptoms. It is a

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Table 1. Inclusion and Exclusion Criteria.

Inclusion
Voluntariness; Age > 18years; No psychiatric comorbidity; No cognitive impairment
Exclusion
Age < 18years; Psychiatric comorbidity; Cognitive impairment.

Table 2. Description of the Sample.

		No	%
Gender	Women	9	41
	Men	13	59
Relationship with the patient	Daughter/Son	13	59
	Sister/Brother	2	9
	Grandchild/ Nephew/ Niece	7	32
Psychotherapy in the last 6 months	Yes	2	9
	No	20	91
I feel responsible for hospitalisation	Yes	12	55
	No	10	45

self-assessment test with three subscales relating to stress, anxiety, and depression, each containing seven items. Responses were recorded on a four-point Likert scale (the available answer choices are described as follows: never, did not apply to me at all, awarded 0 points; sometimes, applied to me to some degree, or some of the time, awarded 1 points; often, applied to me to a considerable degree, or a good part of the time, awarded 2 points; almost always, applied to me very much, or most of the time, awarded 3 points).

The interview conducted at the end of the telephone call had the purpose of recording the severity of the emotional state of the caregiver based on the answer to the following question: “how would you rate your level of anxiety/distress/anger/sadness/joy): low, normal or high?” During the follow-up telephone interview, a final question (with yes/no answer) was asked: “during the hospitalisation of Ms/Mrs/Mr _____ did you feel supported by the care team?”.

Results

The investigated sample (Table 2) was made up of 22 caregivers, 55% of whom reported that they felt responsible for the hospitalisation of their family member (REC-Y), while the remaining 45% did not feel responsible (REC-N).

The patients themselves identified those playing the role of caregivers. In the majority of cases (59%), the caregiver was the son or daughter of the patient. Among all the interviewees, only 9% reported that they had had psychotherapy sessions in the last 6 months.

Taking into account the number of interviewees, we deemed it appropriate to present the data of the variable/subgroup feeling “responsible for hospitalisation”.

As for the emotional state reported by the REC-Y group (Table 3), the most evident finding appeared from the first telephone call (column Call 1), where the “sadness” emotion has a “normal” severity in 100% of the subgroup, while the “anxiety” and “distress” emotions are reported with a mild severity .

In the subsequent period of hospitalization, the percentages of “distress” and “anger” tended to rise and then they declined in the final period of hospitalization. Comparing the “high” emotional level

Table 3. REC-Y, Level of Emotional State Reported at the End of the Telephone Call.

		Call 1	Call 2	Call 3	Call 4	Call 5	Call 6	Call 7	Call 8
Emotional State	Level	%	%	%	%	%	%	%	%
Anxiety	Normal	25	67	42	50	33	25	50	50
	Low	75	25	50	17	17	50	33	25
	High	0	8	8	33	50	25	17	25
Distress	Normal	25	75	17	0	42	50	25	25
	Low	75	25	75	33	50	33	33	50
	High	0	0	8	67	8	17	42	25
Anger	Normal	82	42	25	25	25	33	33	17
	Low	8	50	50	42	33	50	50	50
	High	0	8	25	33	42	17	17	33
Sadness	Normal	100	25	42	42	50	17	42	16
	Low	0	50	33	33	33	50	33	42
	High	0	25	25	25	17	33	25	42
Joy	Normal	67	33	25	8	25	33	42	16
	Low	0	50	42	33	50	42	25	42
	High	33	17	33	59	25	25	42	42

Table 4. REC-N, Level of Emotional State Reported at the End of the Telephone Call.

Emotional State	Level	Call 1	Call 2	Call 3	Call 4	Call 5	Call 6	Call 7	Call 8
		%	%	%	%	%	%	%	%
Anxiety	Normal	30	60	30	40	30	20	40	40
	Low	70	0	30	30	40	50	50	50
	High	0	40	40	30	30	30	10	10
Distress	Normal	60	70	20	30	30	40	10	50
	Low	40	10	40	30	60	40	70	40
	High	0	20	40	40	10	20	20	10
Anger	Normal	80	40	10	10	10	70	30	30
	Low	20	40	50	30	70	20	40	40
	High	0	20	40	60	20	10	30	30
Sadness	Normal	90	30	10	20	10	50	30	60
	Low	10	50	60	60	60	30	40	30
	High	0	20	30	20	40	20	30	10
Joy	Normal	80	34	20	40	30	30	10	40
	Low	0	43	40	50	60	60	50	30
	High	20	30	40	10	10	10	40	30

Table 5. DASS 21, REC-Y.

"I feel responsible" YES		T0	T1
Scale	Value	%	%
Stress	Normal	92	25
	Mild	0	33
	Moderate	8	42
	Severe	0	0
	Extremely severe	0	0
Anxiety	Normal	8	33
	Mild	42	50
	Moderate	25	17
	Severe	25	0
	Extremely severe	0	
Depression	Normal	8	17
	Mild	42	66
	Moderate	50	17
	Severe	0	0
	Extremely severe	0	

Table 6. DASS 21, REC-N.

"I feel responsible" NO		T0	T1
Scale	Value	%	%
Stress	Normal	100	40
	Mild	0	30
	Moderate	0	30
	Severe	0	0
	Extremely severe	0	0
Anxiety	Normal	50	20
	Mild	30	20
	Moderate	20	60
	Severe	0	0
	Extremely severe	0	0
Depression	Normal	20	30
	Mild	40	50
	Moderate	40	20
	Severe	0	0
	Extremely severe	0	0

Table 7. Perceived support from the care team.

	YES	NO
I feel responsible "YES"	73%	27%
I feel responsible "NO"	80%	20%

between the first and last telephone calls (columns Call 1 and Call 8) showed that all percentages increased. The most significant increase was recorded for “sadness” (from 0% to 42%) and “joy” (from 0% to 42%), whereas the values for “anxiety”, “distress”, and “anger” appeared to return to normal. In the REC-N group (Table 4), the emotional fluctuations were more balanced.

The levels of emotional states between the first and last interviews exhibited slight differences. The highest levels of emotional distress were recorded between the third and fifth interviews, whereas they had stabilised at the time of the final interviews. With regard to the results obtained from DASS 21, we decided to maintain our focus on the variable/subgroup feeling “responsible for hospitalisation”.

Table 5 displays the results of the REC-N data category obtained from the processing of the DASS 21 data collected upon admission and one week after discharge of the patient.

One week after discharge of the patient from our Covid-19 unit, the caregivers belonging to the REC-Y group showed higher values on the scale of “stress” at moderate level, while the values on the other scales dropped. It is important to note that the “severe” and “extremely severe” levels are never present either at T0 or at T1. Table 6 presents the REC-N data obtained from the processing of the DASS 21 data collected upon admission and one week after discharge of the patient.

Unlike the REC-Y group, one week after discharge, the REC-N group recorded an increase in the “moderate” levels on the scales of “anxiety” and “stress” and a decrease in the “moderate” level on the scale of “depression” (Table 7).

on the collected data and regardless of their perceived responsibility for hospitalisation, the caregivers felt supported by the opportunity of interacting with the members of the health care team.

Discussion

When a person feels that he/she has no immediately available resources to face an event, he/she enters into crisis, i.e., a disruption occurs in his/her homeostatic balance with the external environment.

Hence, the Covid-19 pandemic has caused a major change in the state of mental health of people, who are suffering a severe psychological burden [6,7].

Multiple studies have investigated the impact of disasters or traumas on the mental health of individuals or groups. Some of them may develop mental disorders: Post-Traumatic Stress Disorder, other Anxiety Disorders, Depressive Disorders, and Substance-Related Disorders.

More often, they respond to these events with a hardly classifiable state of psychological distress: general psychological distress with negative emotions, such as anger, sadness, fear, anxiety, irritability, nervousness, diminished interpersonal interactions, and even social withdrawal and family conflicts.

The psychological and psychosocial impact of traumatic events varies according to the biological, psychological, and social characteristics of individuals and the extent of the traumatic event itself.

On a purely relational level, a stressful event negatively affects family and couple life by increasing tension and worsening the quality of relationships. Traumatic stress also leads to irritability, lower sexual desire, decreased partner search, and lower birth rate.

The study conducted by Maria del Carmen on the emotional states of the Spanish population during the quarantine period [8] reveals that the perception of the Covid-19 threat is significantly correlated with emotional states such as sadness, depression and anger hostility.

The findings from our study highlight that the emotional states of the interviewed caregivers changed with the progression of multidisciplinary support.

In line with the findings by Maria del Carmen [8], the analysis of our data demonstrates the same “circular” dynamics, in which low levels of anxiety and anger alternate with high levels of distress and sadness. With regard to the variable related to the sense of responsibility of

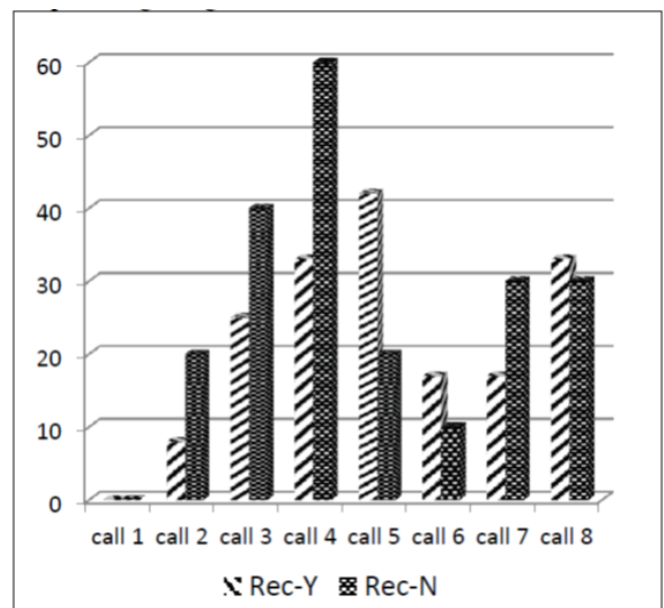


Figure 1. Anger, high level.

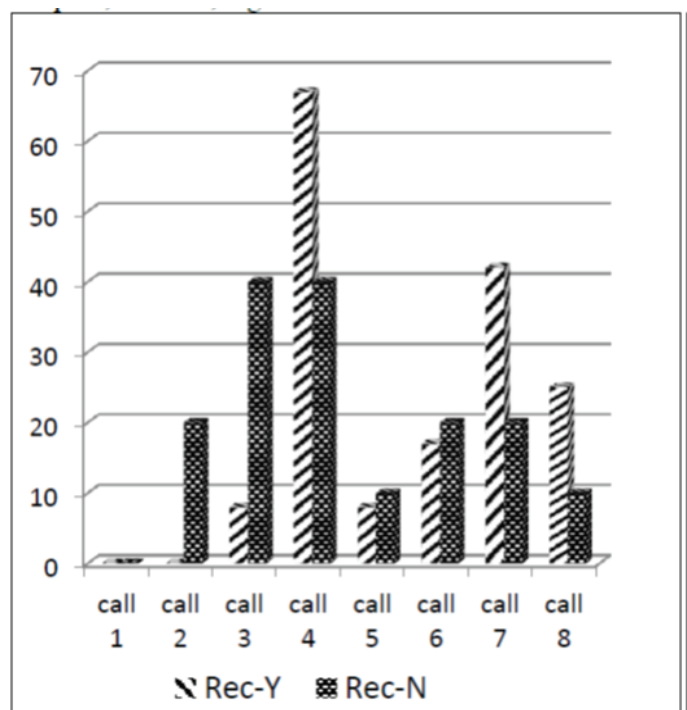


Figure 2. Distress, high level.

caregivers for the hospitalisation of their family members, we observed that during the initial interviews conducted with a multidisciplinary approach, the levels of anger and distress were all normal, whereas, in the following interviews, they showed two different curves.

In particular, as regards anger (Figure 1), we believe that the members of the REC-N group turned it towards health workers who, in their opinion, were unable to cope with the disease of their family members. This may have triggered a vicious circle. In other words, the caregivers presumably thought that health care workers, already exposed to high levels of anxiety and/or depression [9] due to concerns about the risk of contagion and towards their patients [10], had no time to care for their emotional state through telephone calls. As a result, they are likely to have felt that they were not receiving proper attention, developing a higher sense of frustration.

The subsequent multidisciplinary interviews mitigated the level of anger until bringing it to its initial value. As regards distress (Figure 2), we noted an interesting evolution of interviews starting from the fourth one. The caregivers who reported to feel responsible (REC-Y) for hospitalisation appeared to be aware of their powerlessness in clinical management of their family members and to be unable to bear the related emotional burden. With the progression of interviews, the peak of distress diminished. Towards the end of the hospitalisation period, their level of distress rose again vs. that upon the initial interviews. The reason for this trend is that the psychological resolution of distress takes longer than the clinical resolution of the disease. Moreover, as patients did not receive psychological support, the caregivers suffered an excessive emotional burden because they could not manage the psychological stress of their family members.

This assumption is corroborated by a study [11] demonstrating that, during psychological interviews, patients with Covid-19 gradually changed their attitude towards the disease expressing different emotional responses to its various stages. Negative emotions, which dominated the early stages of the disease, gradually turned into mixed positive and negative emotions. Hence, active psychological support can promote physical and mental recovery in Covid-19 patients.

With regard to the results obtained from the processing of the DASS 21 data (Table 5), we observed that, thanks to our multidisciplinary interviews, the caregivers of the REC-Y group reduced their anxiety and depression levels.

The increased number of caregivers reporting “moderate stress” is in line with the previously discussed levels of anxiety. REC-N caregivers (Table 6) showed a sharp increase in their “moderate” anxiety and stress levels and a decrease in their depression level. It is worth stressing that, from T0 to T1, the reference sample moved from a “moderate” depression to a “moderate” state of anxiety and stress. Due to their feelings of resignation and powerlessness towards the disease, and the inability to see their family members during hospitalisation, the caregivers developed reactive anxiety and stress symptoms in taking care of their family members immediately after discharge from our Covid-19 unit. This may be ascribed to the fact that the clinical evolution of discharged Covid-19 patients involves a greater care burden than that existing before admission to the relevant hospital unit.

Ultimately, a common finding in the reference sample was the perception of the received multidisciplinary support (Table 7). None of the caregivers asked for the interviews to be stopped or to be excluded from the research protocol. We believe that this finding is to be taken into consideration in developing new protocols to support caregivers of hospitalised Covid-19 patients.

Conclusions

The study demonstrates the need for putting in place multidisciplinary support strategies for caregivers of Covid-19 patients. Taking action to help them manage their emotional experience can have a significant impact on their quality of life. They can reduce their levels of anxiety, depression, and stress and, at the same time, improve their well-being by acquiring more awareness of their inner resources and call upon them to cope with the situation. Early and continuous

professional and psychological support can prevent physical and mental harm [12]. We agree on the conclusions drawn by Dubey and Biswas [13], who suggested the creation of organisations in charge of preventing mental health problems during specific pandemic conditions, and of promoting research and specific health care. The encouraging results of this study were achieved thanks to multidisciplinary teamwork, in which the integration of psychological and medical skills helped reduce the psychological stress to which caregivers were exposed. Furthermore, promoting interaction with caregivers, who experience a significant psychological distress, can protect health workers from the stress induced by the caregivers themselves, create a safe and secure work environment for health workers, thereby lessening their psychological distress, and improving the quality of their work [14].

Our study does not claim to be exhaustive. It was intended to stimulate a greater reflection on and an expansion of this research area, trying to overcome some critical issues, including those related to the size of the reference sample, the limitations of statistical processing, and the increase in the number of variables to be examined.

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