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Impact of psychological intervention on anxiety, depression, and post-traumatic stress disorder: results from a longitudinal study of hospitalized Covid-19 patients

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Summary. Objective. Hospitalization for Covid-19 has been recognized as a potentially traumatic experience. This longitudinal cohort study assessed the impact of psychological intervention for Covid-19 patients on anxiety, depression, and post-traumatic stress disorder (PTSD). **Materials and methods.** Of 386 Covid-19 patients enrolled, 127 completed HADS and PCL-5 questionnaires at 2 months (T_1), 6 months (T_2) and 12 months (T_3) after hospital discharge. Between T_1 and T_2, patients were offered the opportunity to receive psychological intervention: 92 did not request any psychological support (No support group), 15 received only one psychological consultation (Consultation group) and 20 received longer psychological support (Support group). Mixed ANOVAs were used to assess the psychological symptoms of the 3 Groups over Time. **Results.** The No support group reported lower anxiety, depression, and PTSD than the other two groups. Anxiety and PTSD increased over time across groups. A Time x Group interaction was found for depression ($F_{(2.124)}$=3.72, p<.05, $p\eta^2$=.06). The Support group reported a decrease in depression from T_1 (M=7.85) to T_2 (M=7.05) and an increase from T_2 to T_3 (M=8.05), although not significant. The No support (T_1 M=2.84; T_3 M=4.36; p<.001) and the Consultation groups (T_1 M=4.73; T_3 M=6.33; p<.05) reported an increase in depression from T_1 to T_3. **Conclusions.** Psychological interventions were appropriately allocated to patients with more severe symptoms. Most of the patients did not request psychological intervention. Long-term psychological support may have helped Covid-19 patients to contain depressive symptoms over time.

Key words. Anxiety, clinical psychology, Covid-19, depression, psychological support, PTSD.

Impatto di un intervento psicologico su ansia, depressione e disturbo post-traumatico da stress: risultati di uno studio longitudinale su pazienti Covid-19 ospedalizzati.

Riassunto. Obiettivo. Il ricovero per Covid-19, a inizio pandemia, è stata un'esperienza potenzialmente traumatica. Questo studio di coorte longitudinale ha valutato l'impatto di un intervento psicologico per pazienti Covid-19 su ansia, depressione e disturbo post-traumatico da stress (PTSD). **Materiali e metodi**. Dei 386 pazienti Covid-19 reclutati, 127 hanno completato i questionari HADS e PCL-5 a 2 mesi (T_1), 6 mesi (T_2) e a 12 mesi (T_3) dopo le dimissioni dall'ospedale. Tra T_1 and T_2, ai pazienti è stata offerta l'opportunità di ricevere un intervento psicologico: 92 pazienti non hanno richiesto alcun intervento psicologico (gruppo No supporto), 15 hanno ricevuto una sola consulenza psicologica (gruppo Consulenza) e 20 hanno ricevuto un supporto psicologico di maggiore durata (gruppo Supporto). L'ANOVA mista è stata eseguita per valutare i sintomi psicologici dei tre gruppi di pazienti nel tempo. **Risultati.** Il gruppo No supporto ha riportato livelli di ansia, depressione e PTSD più bassi degli altri due gruppi. Ansia e PTSD sono aumentati nel tempo in tutti i gruppi. È stato trovato un effetto di interazione Tempo x Gruppo per la depressione ($F_{(2.124)}$=3,72, p<,05, $p\eta^2$=,06). Il gruppo Supporto ha riportato una diminuzione della depressione da T_1 (M=7,85) a T_2 (M=7,05) e un aumento da T_2 a T_3 (M=8,05), seppure non significativi. I gruppi No supporto (T_1 M=2,84; T_3 M=4,36; p<,001) e Consulenza (T_1 M=4,73; T_3 M=6,33; p<,05) hanno riportato un aumento della depressione da T_1 a T_3. **Conclusioni.** L'intervento psicologico è stato allocato appropriatamente ai pazienti con sintomi psicologici più severi. La maggior parte dei pazienti non ha richiesto un intervento psicologico. Il supporto psicologico di maggior durata può aver aiutato i pazienti Covid-19 a contenere i sintomi depressivi nel tempo.

Parole chiave. Ansia, Covid-19, depressione, psicologia clinica, PTSD, supporto psicologico.

Introduction

Hospitalization for Covid-19, especially at the onset of the pandemic, has been recognized as a stressful and potentially traumatic event for patients due to fear of death, isolation, and concerns regarding the health of other family members who were often hospitalized as well[1,2]. Some studies found high levels of psychological suffering, such as anxiety, depression, and post-traumatic stress among Covid-19 patients, in both the short and long term after discharge[3-5]. In China, Cai and colleagues found that, during con-

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valescence after hospital discharge, 31%, 22%, and 38% of the Covid-19 patients in their sample met the clinical cut-off score for stress, anxiety, and depression, respectively[6]. Similarly, a high percentage of Covid-19 patients in Italy reported anxiety (28%), depressive symptoms (17%), and post-traumatic stress (36%) two months after hospital discharge[7]. Long-term psychological sequelae related to Covid-19 hospitalization have recently been explored, confirming the persistence of psychological distress long after discharge. Bonazza et al.[8] found that six months after discharge nearly 34% of Covid-19 patients reported severe or moderate anxiety and 24% reported severe or moderate depression. Another study[3] found that, at six and twelve months, 44% and 45% of observed Covid patients self-rated within the clinical range of at least one psychopathological dimension.

The impact of hospitalization for Covid-19 on mental health seems linked more to psychological and contextual factors related to the hospitalization itself than to the severity of the infection or treatment[9]. The severity of respiratory syndrome and the severity of treatment (such as ICU hospitalization, C-PAP use) were not found to be associated with patients' psychological distress[10]. Conversely, studies found that lower levels of perceived social support during hospitalization, previous psychiatric conditions, female gender and the loss of a family member or a friend to Covid-19 were all risk factors for the development of psychological symptoms among Covid-19 patients[3,11].

Given the increasing evidence of the long-term psychological sequelae among hospitalized Covid-19 patients[8], psychological interventions have been offered to contain and process the psychological suffering that may emerge during hospitalization or after discharge[12,13]. However, so far, no study to our knowledge has assessed the effect of such psychological interventions on Covid-19 patients' mental health in the short and long term. The aim of this study was to explore the impact of psychological intervention offered to Covid-19 patients on anxiety, depression, and post-traumatic stress disorder (PTSD) at 6 and 12-months after hospital discharge.

Materials and methods

Study design

We conducted a longitudinal cohort study involving Covid-19 patients hospitalized at San Paolo Hospital, Milan, from March 2020 to October 2021. Patients were tested after hospital discharge at 2 ± 1 months (T_1), at 6 ± 1 months (T_2), and at 12 ± 1 months (T_3) using validated questionnaires for anxiety, depression, and PTSD (figure 1). Specifically, anxiety and depression were assessed at T_1, T_2 and T_3 through the Hospital Anxiety and Depression Scale (HADS). To detect stable psychopathological symptoms and cover the whole temporal span of PTSD onset, in accordance with the temporal diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition, Text Revision (DSM-5-TR, 2023), PTSD was assessed only at T_2 and T_3 using the PTSD CheckList-5 (PCL-5).

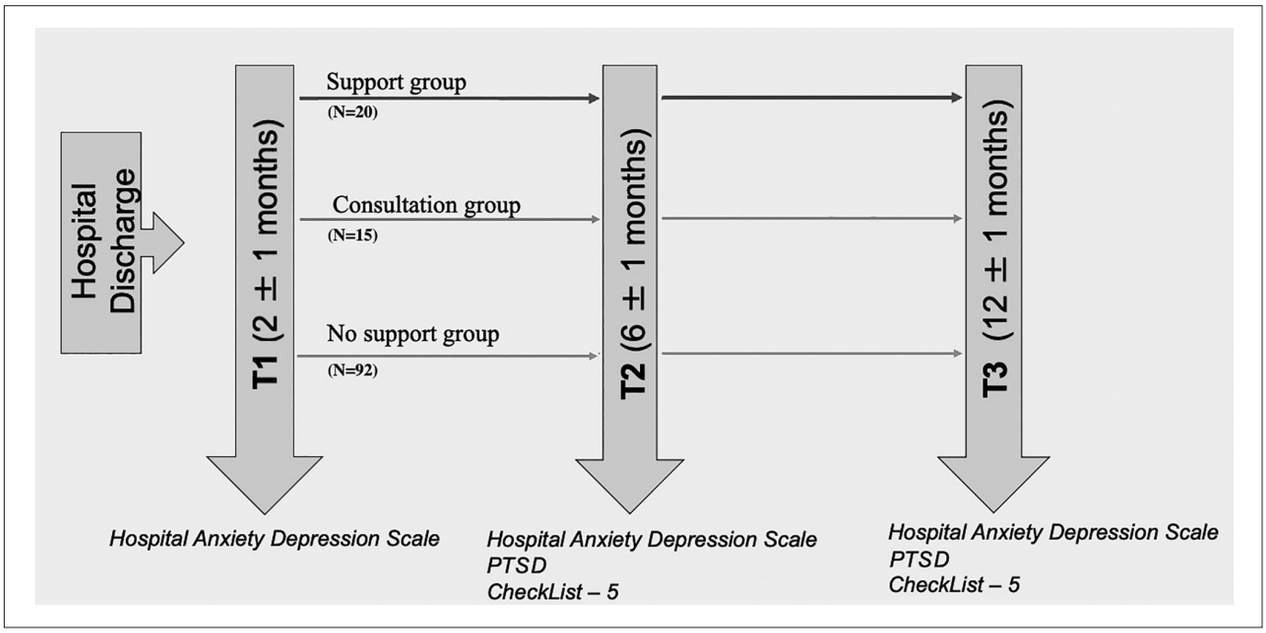

Figure 1. Study design flowchart.

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Study procedure

Patients were enrolled during a multidisciplinary follow-up that was scheduled by the Infectious Diseases Clinic 2 ± 1 months after hospital discharge (T_1). Inclusion criterion was being hospitalized due to SARS-CoV-2 confirmed by positive real-time reverse-transcriptase polymerase chain reaction (RT-PCR) from a nasopharyngeal and/or throat swab. To maintain a naturalistic study design, exclusion criteria were age under 18 years and being unable to understand self-report questionnaires due to linguistic barriers or intellectual disability. During the follow-up (T_1), patients were informed about the purpose of the study and assured about the confidentiality of their responses. Patients who agreed to participate were given a paper version of the HADS to measure anxiety and depression. After completing the questionnaire, a clinical psychologist offered the opportunity to receive psychological intervention. Patients who did not request it were assigned to the "No support" group, while those accepting it were offered a psychological consultation. The psychological consultation was conducted at the Infectious Diseases Clinic with the aim of assessing the patient's psychological condition, resources, and motivation[15]. After the consultation, the psychologist and the patient decided whether to continue the psychological support based on the patient's needs and motivation. Patients who decided not to continue treatment and received only one consultation entered the "Consultation group". Patients who decided to continue the psychological support ("Support group") were treated at the Clinical Psychology outpatients' department. Clinical psychologists trained in different psychotherapy approaches (such as cognitive constructivist, psychodynamic, systemic and humanistic approaches) offered psychological support in person or remotely. The support aimed at validating emotional reactions, integrating traumatic memories, and processing grief. As the support was offered free of charge through the national healthcare system, the number of sessions available was generally limited. The psychological support was concluded before the assessment in T_2.

At T_2 and T_3, the questionnaires were completed online using Survey Monkey or by phone call to those who did not have internet access.

Ethics

The study was carried out in accordance with the Helsinki Declaration of 1975, as revised in 2008. The study design was approved by the Milan Area 1 Ethics Committee (register#2020/ST/358). All patients were fully informed about the nature of the study and signed an informed consent form before participating in the project.

Measures

Socio-demographic and clinical data

Socio-demographic and clinical data were collected from patients and electronic charts using a data extraction form, including age, sex, education, incidence of personal loss, days of hospitalization, and intensity of care received.

HADS

The Italian validated version of HADS[16] was used to assess anxiety and depression. HADS is a self-report questionnaire consisting of two subscales assessing anxiety (HADS-A) and depressive symptoms (HADS-D) respectively. Each subscale is composed of 7 items on a 4-point Likert scale. The total score of each subscale ranges from 0 to 21. Lower scores on each scale indicate reduced symptoms. In the literature, a score between 8 and 10 indicates the presence of mild symptoms, and a score above 11 indicates moderate to severe symptoms[17]. In the analysis, anxiety and depression scales were used as continuous variables. In this study, HADS-A showed good internal consistency with Cronbach α=.87 at T_1; α=.88 at T_2 and α=.89 at T_3. HADS-D showed good internal consistency with Cronbach α=.79 at T_1; α=.81 at T_2 and α=.86 at T_3.

PTSD Checklist-5 (PCL-5)

The Italian validated version of PCL-5[18] was used to assess symptoms of PTSD. PCL-5 is a self-report questionnaire that screens for PTSD symptoms in accordance with the DSM, Fifth Edition (DSM-5). Specifically, PCL-5 assesses the exposure to actual or threatened death, serious injury, or sexual violence (criterion A); intrusion symptoms (criterion B); avoidance of stimuli (criterion C); negative alterations in cognition and mood (criterion D); marked alterations in arousal and reactivity associated with the traumatic event (criterion E). In this study, we used the PCL-5 Standard form without the criterion A component. Given the new scenario imposed by the Covid-19 pandemic and hospitalization, patients might have been exposed to other traumatic experiences that were not included in the examples offered in criterion A. Moreover, in criterion A patients are required to describe the worst event that happened to them. As the questionnaire was self-administered, we wanted to avoid activating patients without being able to provide immediate support. PCL-5 is composed of 20 items rating the frequency of symptoms on a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely). The total score ranges from 0 to 80, with higher scores reflecting a PTSD symptomatology. A score of ≥ 31 is generally considered to be an indica-

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tor of the probable presence of PTSD. However, in the analysis, the scale was used as a continuous variable. In this study, PCL-5 showed excellent internal consistency with Cronbach α=.94 at T_2 and α =.96 at T_3.

Statistical analysis

Descriptive statistics (frequency, mean, SD) were used to summarize the socio-demographic and psychological variables of the three Groups. A one-way ANOVA with Bonferroni post hoc test was performed to compare depression and anxiety in the three groups at T_1. We used χ^2 to assess if there was a difference between the groups regarding the loss of family members to Covid. Since the assumption checks for ANOVAs were satisfactory, to explore the psychological symptoms of each group over time, three mixed ANOVAs were used with the Groups (No support, Consultation, Support) as between factor and Time (T_1, T_2, and T_3) as within factor. Post-hoc pairwise comparisons (LSD) were used to explore significant differences. ANOVAs were performed including Anxiety and Depression at T_1, T_2 and T_3, and PTSD at T_2 and T_3. Where appropriate, for all ANOVAs, Greenhouse-Geisser epsilon was applied to correct the degrees of freedom. Analyses were performed using SPSS, version 28. We considered $\alpha \leq .05$ for statistical significance.

Results

Participants

Of the 386 patients who agreed to participate in the study, 377 completed questionnaires at T_1, 205 completed questionnaires at T_2 and 171 completed questionnaires at T_3. However, only 127 completed the questionnaires over all three time points and were included in the study. Of these 127 patients, 92 did not receive psychological support (No support group), 15 received one psychological consultation (Consultation group) and 20 received longer psychological support (Support group). Patients in the Support group received a mean number of 11.25 (SD=5.41) psychological sessions. The socio-demographic and clinical characteristics of the total sample and of the patients belonging to the No support, Consultation and Support groups are listed in table 1.

The means (SDs) of anxiety, depression, and PTSD of the different groups over time, are shown in table 2.

In terms of Anxiety, the No support group differed significantly from the Consultation and Support groups at T_1 ($F_{(2.124)}$=24.76; p<.001), reporting lower scores. With regard to Depression, the Support group significantly differed at T_1 ($F_{(2,124)}$=23.54; p<.001) from the Consultation and No support groups and re-

Table 1. Socio-demographic and clinical characteristics of the patients.

		Total sample	No Support group	Consultation group	Support group
Variable	**Description**	**N (%)**	**N (%)**	**N (%)**	**N (%)**
Gender	Males	90 (71)	71 (77)	9 (60)	10 (50)
	Female	37 (29)	21 (23)	6 (40)	10 (50)
Nationality	Italian	118 (93)	85 (92)	13 (87)	20 (100)
	Other	9 (7)	7 (8)	2 (13)	0 (0)
Age, years	Mean (SD)	56.99 (11.77)	57.29 (11.81)	54.67 (12.01)	57.40 (11.8)
Incidence of personal loss	Yes	35 (28)	22 (24)	3 (20)	10 (50)
	No	92 (72)	70 (76)	12 (80)	10 (50)
Education	Primary school	4 (3)	3 (3)	0	1 (5)
	Secondary school	27 (21)	18 (20)	4 (27)	5 (25)
	High school	60 (47)	44 (48)	8 (53)	8 (40)
	University	36 (29)	27 (29)	3 (20)	6 (30)
Intensity of care	No treatment/Low-flow O_2	77 (63)	58 (66)	8 (54)	11 (55)
	C-PAP/Venturi	34 (27)	24 (27)	5 (33)	5 (25)
	Intensive Care	12 (10)	6 (7)	2 (13)	4 (20)
Hospitalization, days	Mean (SD)	13.22 (10.53)	11.45 (8.03)	18.27 (16.39)	17.30 (12.98)

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Table 2. Means of anxiety, depression, and PTSD of the three groups across times.

Variables	Groups	T1		T2		T3	
		Mean	SD	Mean	SD	Mean	SD
Anxiety	No support	7.80	4.31	9.87	4.78	9.00	4.78
	Consultation	10.65	3.68	10.05	3.87	10.40	3.60
	Support	4.33	3.79	5.41	3.89	5.70	3.79
Depression	No support	2.84	2.81	4.16	3.65	4.36	3.89
	Consultation	4.73	3.51	5.87	3.62	6.33	3.68
	Support	7.85	3.48	7.05	3.39	8.05	3.42
PTSD	No support	-	-	15.39	14.41	16.79	16.05
	Consultation	-	-	22.87	12.9	30.2	15.36
	Support	-	-	32.15	15.03	34.60	14.46

ported higher scores. The Support group reported a higher incidence of personal losses ($\chi^2_{(2)}$=6.06, p<.05) than the Consultation and No support groups.

Anxiety

A mixed-model ANOVA with Time (3) x Groups (3) was applied to Anxiety (table 3). A significant main effect was found for Groups ($F_{(2.124)}$=22.55, p<.001, $p\eta^2$=0.27). Specifically, anxiety was significantly lower in the No support group (M=5.14) than in the Consultation (M=8.89, p<.001) and Support groups (M=10.37, p<.001).

A significant main effect of Time was observed ($F_{(1.124)}$=4.11, p<.05), although very weak ($p\eta^2$=.03). Anxiety increased significantly from T1 (M=7.59) to T_2 (M=8.44, p<.05) and from T_1 to T_3 (M=8.36, p<.05). The Time x Groups interaction was not significant ($F_{(2.124)}$=2.70, p=.07). Figure 2 shows HADS-A marginal means of the 3 groups over time.

Depression

A mixed-model ANOVA with Time (3) x Groups (3) was applied to Depression. A significant main effect was found for Groups ($F_{(2.124)}$=13.51, p<.001, $p\eta^2$=0.18) on Depression (table 4). Depression was significantly lower in the No support group (M=3.79) than in the Consultation (M=5.64, p<.05) and Support groups (M=7.65, p<.001).

A significant main effect of Time was observed ($F_{(1.124)}$=10.36, p<.001), although weak ($p\eta^2$=.08). Depression increased over time, with a significant rise from T_1 (M=5.14) to T_3 (M=6.25, p<.01). A significant Time x Groups interaction was found ($F_{(2.124)}$=3.72, p<.05) although the effect was weak ($p\eta^2$=.06). Examination of marginal means (figure 3) showed a significant increase in Depression in the No support group from T_1 (M=2.84) to T_2 (M=4.16, p<.001) and from T_1 to T_3 (M=4.36, p<.001). In the Consultation group, Depression increased significantly from T_1 (M=4.73) to T_3

Table 3. Main and indirect effects of Time and Groups on Anxiety.

Within-participants effects		HADS-A				
		Type III Sum of Squares	df	Mean Square	F	Partial η^2
Time	Linear	21.09	1	21.09	4.11*	.032
	Quadratic	10.16	1	10.16	2.55	.020
Time x Groups	Linear	21.64	2	10.82	2.11	.033
	Quadratic	21.58	2	10.79	2.70	.042
Error	Linear	635.79	124	5.13		
	Quadratic	494.73	124	3.99		
Between-participants effects						
Groups		1657.55	2	828.77	22.55***	.267
Error		4557.91	124	36.76		

Legend: HADS-A= Hospital Anxiety and Depression Scale-Anxiety subscale.
*p<.05; **p<.01; ***p<.001

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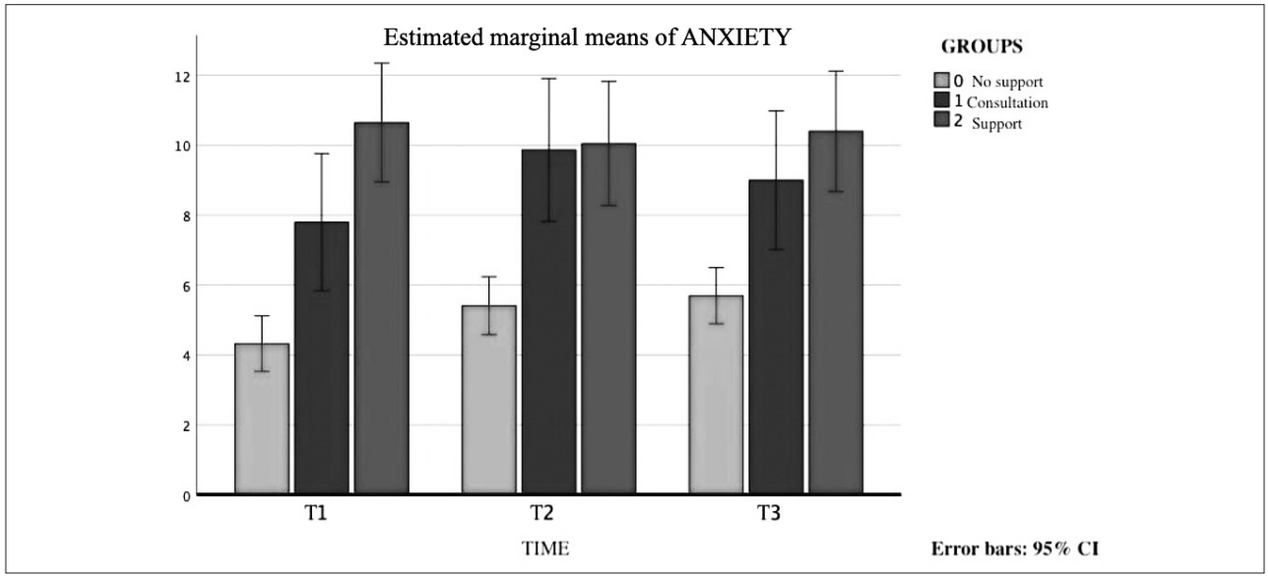

Figure 2. Marginal means of HADS-A (Anxiety) of different groups over time.

(M=6.33, p<.05). The Support group reported a -.80 decrease in HADS-D scores from T_1 (M=7.85) to T_2 (M=7.05) and a 1.00 increase in scores from T_2 to T_3 (M=8.05), although not significant.

PTSD

A mixed-model ANOVA with Time (2) x Groups (3) was applied to PTSD. A significant main effect for Groups was observed ($F_{(2.124)}$=14.14, p<.001, $p\eta^2$=0.19) on PTSD (table 5). PTSD was significantly lower in the No support group (M=16.09) than in the Consultation (M=26.53, p<.01) and Support groups (M=33.38, p<.001).

A significant main effect for Time was observed ($F_{(1.124)}$=8.77, p<.01), although weak ($p\eta^2$=0.07). PTSD increased significantly from T_2 (M=22.23) to T_3 (M=27.20, p<.01). The Time x Groups interaction was not significant ($F_{(2,124)=}$2.03, p=.14). Figure 4 shows PCL-5 marginal means of the 3 groups over time.

Discussion

This study is the first to our knowledge to explore the impact of psychological intervention on Covid-19 patients' psychological symptoms at 2, 6 and 12 months after hospital discharge. The psychological intervention entailed a psychological consultation,

Table 4. Main and indirect effects of Time and Groups on Depression.

Within-participants effects			**HADS-D**			
		Type III Sum of Squares	**df**	**Mean Square**	**F**	**Partial η^2**
Time	Linear	43.26	1	4.26	10.36***	.077
	Quadratic	1.098E-5	1	1.098E-5	.000	.000
Time x Groups	Linear	15.00	2	7.50	1.796	.028
	Quadratic	23.52	2	11.76	3.72*	.057
Error	Linear	517.89	124	4.18		
	Quadratic	392.50	124	3.17		
Between-participants effects						
Groups		789.94	2	394.97	13.51***	.179
Error		3624.35	124	29.23		

Legend: HADS-D= Hospital Anxiety and Depression Scale-Depression subscale.
*p<.05; **p<.01; ***p<.001

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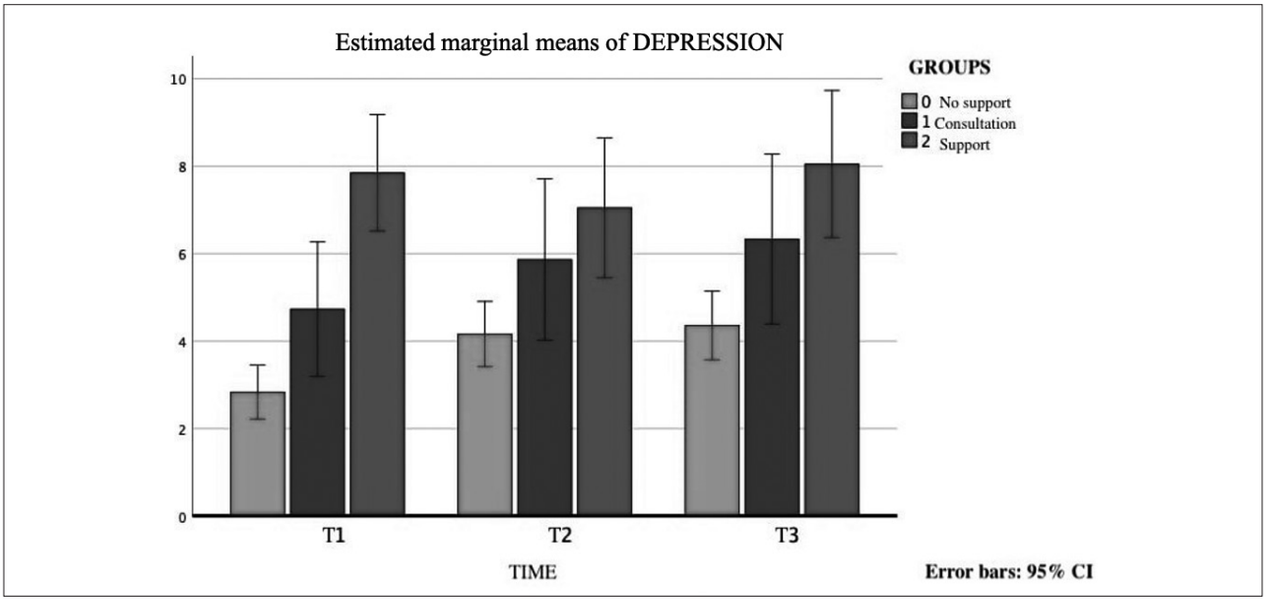

Figure 3. Marginal means of HADS-D (Depression) of different groups over time.

followed by longer psychological support, where appropriate. Psychological intervention was offered to Covid-19 patients during their clinical follow-up at 2 months after hospital discharge and ended 6 months after discharge.

Our findings showed that patients who initiated the psychological consultation or longer support reported higher levels of anxiety, depression, and PTSD symptoms than patients who did not. This finding suggests that psychological intervention was appropriately requested by patients reporting more severe psychological symptoms after hospitalization for Covid-19. Interestingly, patients who engaged with longer psychological support suffered more frequently from Covid-19-related losses than patients who received only one psychological consultation or did not receive any support. Previous literature highlighted how suffering a personal loss due to Covid-19 was a very challenging experience and a risk factor for psychological well-being[19]. Loss of family members for Covid-19 frequently happened in isolation, without the possibility of saying goodbye or organizing funerals[19], and were often followed by feelings of guilt and sorrow among patients[15,20]. Our findings suggest that the experience of loss and the subsequent depressive symptoms may have been a major trigger for seeking longer psychological support. Patients who conducted only one psychological consultation presented more severe symptoms than the No support group, but similar symptoms to the Support group. However, they did not benefit from a longer intervention to contain symptoms. In the future, follow-up sessions could be scheduled for these patients to monitor the development of any psychological symptoms and their motivation to seek help.

Table 5. Main and indirect effects of Time and Groups on Post-Traumatic Stress Disorder.

Within-participants effects			**PCL-5**			
		Type III Sum of Squares	**df**	**Mean Square**	**F**	**Partial η^2**
Time	Linear	490.51	1	490.51	8.77**	.066
Time x Groups	Linear	227.25	2	113.62	2.03	.032
Error	Linear	6936.20	124	55.94		
Between-participants effects						
Groups		11245.16	2	5622.58	14.14***	.186
Error		49308.27	124	397.65		

Legend: PCL-5= Post-Traumatic Stress Disorder CheckList-5.
*p<.05; **p<.01; ***p<.001

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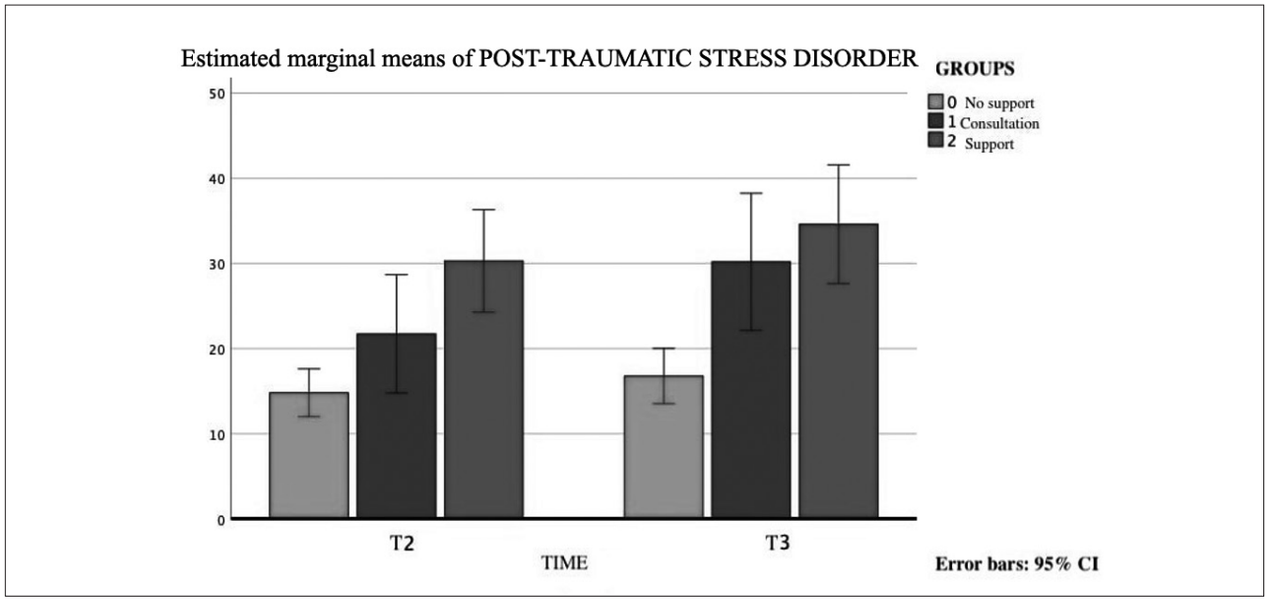

Figure 4. Marginal means of PCL-5 (PTSD) of different groups over time.

In our study, the majority of patients hospitalized for Covid-19 did not ask for and therefore did not receive psychological intervention. These patients reported less severe psychological symptoms than patients who requested one psychological consultation or longer support. In line with literature on resilience, many patients may have inner resources to cope with challenging situations posed by Covid-19[9]. However, in our study we found an increased trend of anxiety and PTSD symptoms over time, regardless of the intervention group. It is possible that this trend of increased anxiety and PTSD was due to the subsequent pandemic waves that hit Italy during the study period, which lead to a general increase of psychological symptoms across the population[21].

Interestingly, our findings showed that patients who engaged with longer psychological support reported stable depressive symptoms over the three timepoints, whereas patients who received only one consultation, or did not receive any support, exhibited an increasing trend of depressive symptoms over time. These findings suggest that longer psychological support may have contained depressive symptoms among Covid-19 patients. We observed a slight decrease of depressive symptoms during the psychological support. However, given the high levels of depressive symptoms still reported by patients after psychological support had ended, there is a case for this support to be continued. Resources should be allocated to the healthcare system so that psychological support can be extended, if necessary.

Limitations

This study had several limitations. We used a real world, prospective design. Given the urgent need for psychological support and the ethical issues associated with randomly assigning psychological interventions to patients, it was not possible to conduct a randomized controlled trial. Patients decided whether to receive one psychological consultation or continue with longer psychological support based on their needs and motivation. Moreover, as the study was conducted during the pandemic, other confounding factors may have influenced the psychological symptoms of our sample. As the study was longitudinal and incentives for completing the questionnaires were not available, an increased dropout rate was observed over the study period and therefore bias may exist in our sample. Another limitation concerns the heterogeneity (in length and psychotherapeutic orientations) of the psychological support provided. Lastly, our study did not collect data on positive psychological outcomes, such as post-traumatic growth, which may be prompted by psychological interventions. Future research assessing the impact of psychological interventions on patients after discharge could also include positive outcomes such as post-traumatic growth and meaning in life.

Conclusions

Despite these limitations, our results suggest that psychological support for Covid-19 patients contributed to containing depressive symptoms over time. The

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healthcare system should allocate resources in order to offer psychological support to Covid-19 patients who require it. Psychological screening could be conducted during follow-up visits to identify patients displaying psychological distress. In addition, follow-ups could be scheduled to monitor the psychological condition and motivation of those patients who show severe psychological symptoms but do not engage in longer psychological support. Future research could explore which psychological interventions are effective for patients suffering from different organic conditions and with respect to which psychological outcomes.

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