ISSN: 2634 - 680X

Journal of Clinical Case Studies Reviews & Reports

SCIENTIFIC Research and Community

Research Article

Open Access

A severe COVID-19 Case Study: Psychological Intervention as a Part of Rehabilitation Programme in a Greek Teaching Hospital in Athens

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ABSTRACT

We report a case study of an adult man with severe COVID-19 who attended Psychological Intervention after prolonged hospitalization in the Intensive Care Unit, intubation and finally, participation in Rehabilitation Programme of a Greek Teaching Hospital in Athens. To export results, a qualitative data analysis were collected from Focused Interview, Psychological Intervention based on Short/ Systemic Psychotherapy and a quantitative data analysis from the Beck Depression Inventory and further triangulation of qualitative and quantitative data took place. The study focuses on the psychology of COVID-19 survivor patient, in line with complex needs, psychological effects and specific stressors, following a life-threatening disease. In the light of a therapeutic 'flexibility' and finally of a combination of multi-factorial nature of the disease that requires integration and simultaneous exploring of not only the physical, but also of the psychological needs of the patient.

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Received: October 30, 2022; **Accepted:** November 08, 2022; **Published:** November 14, 2022

Keywords: COVID-19, Long COVID, Psychological Intervention, Qualitative Analysis, Triangulation Method, Depressive mood, Intensive Care Unit, Rehabilitation (Rehab) Programme

Abbreviations:
I.P.: Intensified Patient
DSM-5: Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, (DSM-5), APA, 2013
DSM-IVTM: Diagnostic and Statistical Manual of Mental Disorders
DM: Depressive Mood
ICU: Intensive Care Unit
R. Pr.: Rehabilitation (Rehab) Programme

Introduction

The COVID-19 pandemic has claimed worldwide half a billion of cumulative cases and 6 million deaths and numbers are still rising every day (https://covid19.who.int/). A significant proportion of these patients, ranging from 10% in the general population up to 76% in hospitalized patients suffer from a diversity of symptoms persisting for 5 to 12 months from disease onset [1-5]. These symptoms include fatigue and muscle weakness, mental health issues (anxiety, depression, sleeping difficulties), cognitive impairment including memory loss and concentration disorders, shortness of breath, chest pain and poor quality of life [3,4,6,7].

Among the factors associated with poor recovery are comorbidities and more severe acute illness [8]. Patients hospitalized, especially those admitted to the ICU and intubated or receiving high oxygen mixtures, have severe symptoms for several months upon recovery [4,9,10]. Advanced age and prolonged hospitalization are predictors of poor recovery in patients admitted to the ICU due to respiratory failure [11]. Many studies reported physical, cognitive and mental health effects experienced by people recovering from COVID-19 who were several months after hospital discharge [7,12]. These include symptoms: of anxiety and depression in 51 of 384 patients (14.6%) to 367 of 1 617 patients (22.6%); post-traumatic stress disorder in 7 of 97 patients (7.2%) to 31 of 100 patients (31%); cognitive impairment in 19 of 29 patients (65.5%) to 138 of 179 patients (77%); pain in 431 of 1 616 patients (27%); and reduced exercise capacity in 392 of 1 692 patients (22%) to 66 of 204 patients (32.3%) [3,13-18].

10%-20% of people develop COVID-19 experience a variety of mid- and long-term effects after they recover from their initial illness. These effects are known as post COVID-19 condition or 'long COVID' [19].

A new study suggests that 20% of COVID-19 patients increases the risk of psychiatric disorders (within 90 days). Also, Researchers from the NIHR Oxford Health Biomedical Research Centre and the University of Oxford, Department of Psychiatry have reported that: *'Sufferers of 'long COVID appear to experience mental health issues and that COVID-19 survivors are at an increased risk of psychiatric disorders'* [20]. Also, 10% of people, after the pandemic of COVID-19 will develop mood and anxiety disorders, and/or posttraumatic stress disorder (PTSD) (trajectory- based approaches that explore clinical effects to "stress and potentially traumatic events") [21,22]. Also, depressive symptoms are correlated with the severity of COVID-19 and results from the study by the WHO (2021) enhance the need for deep understanding for patients with persistent psychological stress and symptoms associated with COVID-19 diagnosis [23,24].

Early in the course of the pandemic medical associations worldwide issued guidance emphasizing the necessity of Rehabilitation Programmes (R. Pr.) in order to *'optimize functioning and reduce disability in individuals with health conditions in interaction with their environment'* (WHO Rehabilitation Definition, https://www.who.int/news-room/fact-sheets/detail/rehabilitation) [25]. Even after discharge from Rehabilitation Programmes (R. Pr.), post COVID patients suffer from significant reduction in physical function, and the ability to perform daily activities [26]. The National Institute for Health and Care Excellence (NICE), the Scottish Intercollegiate Guidelines Network (SIGN) and the Royal College of General Practitioners (RCGP) in the UK defined this cluster of symptoms persisting for more than 12 weeks as 'post-COVID-19 syndrome' [27]. The latest ERS statement integrates these definitions to describe patients with ongoing symptomatic or post COVID syndrome using the term 'long COVID' [28]. Also, guidelines of Evidence Based Medicine's guidance on post-infectious syndromes is useful for treating long COVID [29,30].

The diagnosis of a sudden life-threatening disease, like COVID-19 and after long COVID symptoms, causes fear of the unknown, of the unpredictable and finally, *fear of death*. In other words, it causes weakness not only on the physical but also on an emotional level. The unpredictability of the disease and the urgency of treatment lead to feelings of loss at all levels. Long COVID often refers to physical/functional deficiency. It is a multi-factorial burdening disease, proportional to its nature, i.e., to physical and psychological factors involved. Patients are imperative to acquire a new lifestyle, quickly and directly. They feel deprived of health, old ways of behavior, undisturbed sleeping, pleasurable activities, as well as other losses which are expressions of the previous healthy self. So, the primary goal of any form of psychological intervention and psychotherapy is to increase tolerance to ambiguities of the disease and finally, accept it (low frustration tolerance) [31,32].

So, the aim of the following case study is to investigate all these psychological stages and challenges, after COVID-19 diagnosis and long COVID symptoms on an adult man. He participated in Psychological Intervention, as a part of Rehabilitation (Rehab) Programme voluntary, after long hospitalization and 2 months intubation in ICU of the Department of 'Evaggelismos' General Hospital of Athens.

The Psychological Intervention:

I. Provides care of people who exhibit psychological symptoms associated with long COVID experience, due to the extreme changes brought by the illness in every aspect of their life, making them different and isolated from the rest of the 'normal/healthy' population [33,34].
II. Explores the impact of a life-threatening disease to the psychology of patient's needs and expectations, after the invasion of a *sudden* event of disease and finally, after a *survival* of it.
III. Focuses on the profound human relationship, where the Therapist is there to give the patient time and space needed to comprehend and, at the same time, feel his psychosomatic and existential needs [35]. It seems that loss of physical health and pain through their stages treat/redefine [32].
IV. Analyses in depth into the emotional exploration of the latent needs, as well as of the failures in fulfilling these needs, after the chronic complications of it, permanent functional impairment. Patients with this deficit, like I.P., often feel a sense of inferiority and experience their self as helpless and unable to control it. At this discouragement state, they become increasingly unable to face their problems and isolating themselves from every source of support [36,37].

Case Study

A 64-years-old man participated in the study, after his survival from COVID-19, at the Department of ICU of 'Evaggelismos' General Hospital in Athens. He was diagnosed with severe COVID-19 (Post COVID-19 symptoms assessed by the CAT) and after a prolonged hospitalization at the Department of ICU of 'Evaggelismos', eventually he recovered [38]. Then, he referred to 8-week period-Rehabilitation Programme (R. Pr.) (after-effects of COVID-19/ post hospital discharge) of 'Evaggelismos', for 2 sessions per week. The (outpatient) R. Pr. is an integrated multidisciplinary assessment and care from recovering of COVID-19 and includes: supervised exercise training, education, breathing control, dietary advice, and Psychological Intervention (3 extra sessions). He remained intubated 2 months period and after that endotracheal tube caused him discomfort, asphyxiation and inability to talk. Many studies reported that long mechanical ventilation causes difficulties in the patient's ability to return to daily activities, 1 year after the ICU hospitalization [39,40]. Especially, a study with patients aged 60 years and above, refers negative change in health –quality of life, in 57 of 106 patients (6 months after hospitalization because of COVID-19) [41].

Thus, long COVID symptoms had affected negative his ability for daily activities and tasks, like shopping, fishing, jogging, even one year after infection and at the same time loneliness, anger and self-isolation arising from it. Long COVID symptoms were traumatic stressors, rendering him passive and weak. This is because as he tried to adjust to the disease all alone, without support of his family members, he often quitted from engagement with emotional and social aspects of his life, and eventually loses control of it. The patient's demographic and clinical characteristics are presented in Table 2. He signed an inform consent and his participation in the Psychological Intervention, as a part of R. Pr., was based on his personal request. He refused to take medication for depression (medication-free depressed patient). The study was approved by the Scientific Council of 'Evaggelismos' General Hospital in Athens, Greece and was registered at ClinicalTrials.gov PRS (ID: NCT04935437).

Psychological symptoms had been present before his participation in R. Pr. (Table 4). The patient also was informed that:

a. The Therapist was Clinical Psychologist, specialized in Clinical & Health Psychology, supervised by a mental expert in Liaison Psychiatry & Psychology [42]. Some important characteristics of the Therapist are presented in Table 6.
b. He should give information, through a self-report, Beck Depression Inventory, for his emotional- depressive state, before R. Pr., after R. Pr., and follow-up (1 year later) assessment [43,44]. He also was informed that the Focused Interview involved psychological effects of COVID-19 in his everyday life [45,46].
c. The regulations of the psychotherapeutic process were: confidence, free associations, as catharsis and non-guided topics of discussion [32,47,48].

Table 1: Characteristic Phrases of Patient (I.P.)

Phrases
'Many nightmares and fears, like that: they didn't give me water, I saw someone outside the door, an enemy… they build my Knees…'
'Septic Shocks led me to a depressive position and traumatized me… I accepted that I'm going to die
'I was often irritable and get nervous because I had lost loved activities, like fishing, joking…'
'I feel sad when I think that I was near the death'
'Doctors, all medical team supported me, replaced my family…'
'Doctors, all medical team supported me, replaced my family…" "After COVID-19, I'm the weak member at home'
'When I have negative thoughts, I want to underestimate myself…'
'Before COVID-19, I was immersed into the problems of my wife and daughters and I was losing control; I need to find myself'
'Only people who love will stay by your side…'
'Family isolation hurts'
'I realized the value and the gift of life and I appreciated essential things, such as health.'
'COVID-19 reminded me that there is life for me out there.'

Table 2: Demographic and Clinical Characteristics of Patient (I.P.)

Parameter	Value
Sex	Male
Age	64
Nationality	Greek
Level of Education	College-Technological school
Occupation	Retired policeman
Marital Status	Married
Children	2
Medical History	No history of other disorders No history of antidepressant or other therapy No previous history of psychiatric disorders
Diagnosis	Severe COVID-19
Mental Health History	No history of other disorders. No history of antidepressant or other therapy No previous history of psychiatric disorders
Current Problem	Psychological - Moderate Depression as a process of grief and adjustment to COVID-19 and long COVID symptoms
Reason for Referral	Rehabilitation Programme: Psychological Intervention (3 sessions/ patient's own request)
Social Network	No friends
Currently Living with	His wife
Family 'Role'	The 'weak member' after COVID-19
Physical Activity	Reduced exercise capacity
Acute COVID-19 characteristics	
Intensive Care Unit Admission	3 months
Intubated	1.5 months
Endotracheal tube	1 month
Rehabilitation Programme	2 months
Long/Persistent COVID-19 Symptoms	Peroneal nerve palsy in the right foot
	Muscle weakness
	Impaired mobility and ability to carry out activities of daily living

Table 3: Characteristic combined Techniques in COVID-19 patient (I.P.)

Techniques
The Technique of ego strengthening: patient healthy personality traits are detected and then utilized as support frameworks (to family, friends, partner, colleagues, and groups). Also, the important attributes in everyday life are reassessed to distinguish from the unimportant, and patient's priority in life are arranged [32].
The Technique of reframing and rational reasoning: patient's history is presented along with an alternative [102] and understanding the self and significant others [103]. Reframing is "a common technique of all-systemic-family approach models", and aims at the presentation of an alternative-positive side of problem of the particular disease [69]. Emphasis is placed on factors contributing to psychosomatic health of the patient, due to the challenge of the physical illness [38]. As in enhancing the expression of all emotions that precede the disease and in investigating them, as well as healthy personality traits that are exploited as backups for the development of personality. Their recognition functions as a positive motive against the sense of helplessness, caused by the disease, reinforcing the sense of self-control and power in life.
The Technique of self-transcendence [37]: the difficulty and pain caused by the disease is regarded as an opportunity for personal development. Existential quests that emerge due to the disease for the meaning of life, transience and death, play an important: therapeutic role.
The Technique of the fighting spirit [104]: this technique has been applied to cancer treatment. It focuses on the personal meanings of the disease and at the same time on the patient's mobilization for the disease crisis management, improving motivation to fight, will and quality of life [105]. The expectation for greater control over decisions for patient's lives is encouraged by addressing the "here and now" reality and the optimism, targeting a normal life.

Table 4: Patient's Psychological symptoms

Symptoms
Psychological Symptoms • Anxiety, worry and fear: his responses to stressors, within in 2-3 months of the onset of long COVID symptoms (serious health issues that increase disability: permanent physical impairment) • Insomnia • Difficulty concentrating • Low and Depressive mood is another response to above stressors: hopelessness, feeling isolated, loss of self-esteem, sadness, crying, lack of joy from previous pleasurable things • Irritability • Lack of Motivation [106]
One or both of these criteria exist: • Distress that is out of proportion with expected reactions to the stressor • Symptoms must be clinically significant – they cause marked distress and impairment in functioning • Distress and impairment are related to the stressors and are not an escalation of existing mental health disorders • The reaction isn't part of normal bereavement • Once the stressor is removed or the person has begun to adjust and cope, the symptoms must subside within six months.

Reference: The *DSM-5* defines Adjustment Disorder as "the presence of emotional or behavioral symptoms in response to an identifiable stressor(s) occurring within 3 months of the onset of the stressor(s)" (American Psychiatric Association, 2013).
Reference: DSM-IVTM, 1994; DSM-5, APA, 2013, F. 309.0: Adjustment Disorder with Depressed Mood (subtype). Specifically, this subtype is precipitated by an obvious stressor, cause distressful symptoms, and are time-limited.

Table 5: Materials and Methods

Tools			
	Before R.PR.	After R.PR	Follow-up (1 year later)
Focused Interviews	x	x	x
Beck Depression Inventory	x	x	x
Psychotherapy Process	x	x	x

Table 6: Psychological Intervention

Characteristics of Clinical Psychologist/Therapist
Considers the patient as a unique personality with psychosomatic needs.
Performs active listening to the patient's needs and wishes that are related not only to COVID-19 but also to life in general.
Contributes to a therapeutic relationship based on support instead of interpretations.
Reinforces the expression of COVID-19 experiences, as well as verbalization of persistent and exaggerated negative beliefs or expectations, to which the patient resists (DSM-5).
Encourages deep understanding of COVID-19 and its impact in his life, as this contributes to reality testing instead of idealizations.
Reinforces individualized responsibility, not only towards his disease, but also towards the patient's everyday life.
Explores the impact of family dysfunction in his depressive mood.

Materials & Methods

I.P. was evaluated before R. Pr., after R. Pr., and 1 year later (follow-up) (Table 5). Analytically, the characteristics of methodological tools used for the collection of the data and the analysis were:

Focused Interview (3 sessions): The Focused Interview is a research-methodological tool with a large range of forms applications and it is widely used in qualitative research [49-51]. The interviewee is free to express their own subjective experience in whatever way wants on the condition of the disease, which the interviewer communicates early in the procedure [49,52].

Focused Interview to the I.P., before, after and 1 year later (follow up) participation, in R. Pr., was conducted by a Clinical Psychologist, specialized in Health Psychology, and took place in the hospital setting of the General Hospital of Athens 'Evaggelismos' (where she works) [49]. The material of the interviews is subject to qualitative analysis and is discussed with a supervisor/ mental health specialist to increase objectivity. The content analysis of the I.P [53,54]. answers from the Focused Interview is based on Grounded Theory Methodology which its objective is to exhaust all possible thematic categories (theoretical frameworks) of the initial data (interview answers) [55-59].

The main feature of Focused Interview that differentiates it from other types of interviews, is that it conducts an analysis of the patients' situation, in a warm relationship between interviewer and interviewee, changing the nature of the relation from investigative to humane [60]. Also, rapport is a significant factor for the course of the interview [45,61].
The criteria of the interview were the following:

a. the interviewer ought not to guide in order to allow the participant to answer at will [62].
b. the depth and personal framework should be revealed by the interviewee through emotional and basic parameters of the answers in order to determine if the experience is of central or peripheral importance
c. the idiosyncratic associations, beliefs (thus assessing the subjective dimension in the particular situation/ disease) and ideas are to be extracted with regard to the needs and experiences of each patient [63].
d. it is necessary to cover predefined issues and thematic categories as a point of reference and since the study refers to a type of patients (clinical interview), (disease- oriented and clarification questions about the situation of the disease) and e. active listening, achieving balance between speech and listening, per patient [61].

The following are some characteristic questions [53,55]:

– What was the course of your adjustment to COVID-19?
– Do you identify any inappropriate extreme behaviors in COVID-19 self-care?
– How do you manage stress in your everyday life?
– Are you afraid of long COVID symptoms?
– How does COVID-19 affect your body and self-image?
– Do you believe that long COVID symptoms affect the quality of your life?
– What role do you have in your own family, after COVID-19?
– What changes had made in your everyday life because of the invasion of COVID-19?

Beck Depression Inventory (BDI) (self-report): standardized in Greece for men and women. Self-report completed in 10 minutes [43,64,65]. The inventory is consisted from 21 ITEMS, and scores>10 meet the threshold for a diagnosis of depression,

with total score from 0- 63, as seen in **Table A, Appendix A. & in Table B, Appendix B**. Many references confirm its reliability and the validity for the measurement of Depression [66].

Psychotherapy Process (3 sessions): Psychological Intervention started in the beginning of R. Pr. of 2021 and the meetings took place at 'Evaggelismos' General Hospital. The patient's participation in the intervention was based on his own will. For the purpose of maintaining confidentiality, names and records have been changed. The procedure lasted 3 sessions (Characteristic Phrases of the Patient) (Table 1), and Psychotherapeutic Techniques based on Short/ Systemic Psychotherapy. "Time" of past, present and future in Short/ Systemic Psychotherapy and its interplay and relation to the "story" of the patient (I.P.) of the present case study may led him to realize the disease and the everyday life with "new eyes" as seen in Table 3 [67-71].

In the meantime of R. Pr., the I.P., according to his choice, enters the sessions. Therapist adopts/ constructs a positive approach of patient's past history and memory. In other words, creates new 'stories and messages' with positive aspects, introducing new possibilities for change into a negative past of I.P. Thus, through 'hypothetical questions'is allowed to change his present depressive state to a "fresh attitude and interpretation of his past" [67,71,72]. For example, the following are some questions: '*If you changed your 'weak character', what kind of limits would you have with your own family, today?', 'If you learn to believe in you with all your special characteristics, are you find new balances?', 'If you know what you want in life, what your defences are?', 'If you accept all parts of yourself, how could you cope/ manage, even long COVID symptoms?*'.

Therapist also explored mostly his feelings about the 'facts' and traumatic stressors, how his personality characteristics and family relations had contributed in these areas:

a. his strength to support what earlier was presenting himself with guilt,
b. his willingness to leave from others' shadow, put his own terms/priorities, and
c. his expectation to look deep inside him in order to leave from weakness, not only on physical but also on an emotional level.

Moreover, therapeutic phases were formed according to the *Sessions' agenda*:

a. Personality traits and coping with COVID-19: a bidirectional relationship.
b. Patient's personal and family history and the course of his adjustment to COVID-19 [73].
c. Anxiety and fear of long COVID symptoms.
d. Fear of death and COVID-19 [70]: emphasis on *"insight and emotional tone of the session - emotions are the golden route to change"* [74].
e. Self, illness and life priorities.
f. Medical staff, support/ communication skills and treatment compliance [75].
g. Redefinition of the disease [76].

The following are some of combined Techniques in COVID-19, as a part of Psychological Intervention, applied to the I.P. (Table 3).

Table A: Appendix A: 21 items of BDI

Items of BDI
Sadness
Pessimism/Discouragement
Sense of Failure
Dissatisfaction
Guilt
Experience of Punishment
Self-Dislike
Self-Accusation
Suicidal Ideation
Crying
Irritability
Social Withdrawal
Indecisiveness
Unattractiveness
Work Inhibition
Insomnia
Fatigability
Loss of Appetite
Weight Loss
Somatic Preoccupation
Loss of Libido

Table B: Appendix B: Scores of BDI

Scores	Diagnosis
0 - 9	Non Depressed
10 - 15	Minimal Depressed
16 - 19	Moderate Depressed
20 - 29	Serious Depressed
30 - 63	Major Depressed

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Procedure

In the present case study, a research strategy of Triangulation between the different methods took place, using qualitative tools, such as Focused Interviews and Psychotherapy sessions combined with quantitative tools, such as Beck Depression Inventory. The data collected were analyzed in order to identify common findings. Triangulation is a multi-method research approach of human behavior, which increases confidence in the final research findings [77-79]. Also, it helps to compensate the potential weaknesses of each tool separately [77,78]. Moreover, Triangulation describes the use of various methodology tools for measuring a phenomenon, like a disease, aiming at the reliability and the validity of a study and is particularly effective, when a case study is investigated [45,78,79].

Results

Significant correlations came up, which can be divided into the following areas:

Treatment compliance: plays an important role to the degree to which his behavior was in line with the instructions of clinicians and the Therapist of R. Pr., regarding regimen, consistency, proper nutrition, exercise, managing stress and traumatic stressors (through psychotherapy sessions). Before the participation in the R. Pr., his psychological difficulties were apparent and manifest: a. with lack of interest, hopelessness, helplessness brought by permanent deficiencies of long COVID symptoms, b. with prolonged stress, c. with intense stress caused by accumulative psychosomatic parameters involved in disease treatment. After it, these feelings transformed into hope, relief and positive expectations through *identifications* with clinicians and the Therapist (therapeutic insights) [80,81].

The characteristics of the relationship between health-care professionals in R. Pr., intensivists in ICU, Therapist and the patient (I.P.): His compliance to treatment plan was positive (interest and acceptance to apply the suggested recommendations). Moreover, his participation in R. Pr., was a result of a tailored dynamic relationship with clinicians, intensivists and the Therapist rather than a static process. When health-care professionals categorize patients as uncooperative or resisting treatment, they indirectly contribute to non-compliance. Thus, it is necessary that experts are not judgmental but sensitive to patients, and to promote compliance with recommendations and care for patients' health, implementing strategies, like: self-observation, reinforcement, listening, empathy, encouraging support from group interventions, and negotiation of the therapeutic plan with active and mutual patient engagement (patient-centered care) [82,83].

Psychological characteristics of the patient (I.P.): he had some personality traits that were responsible for his difficulties in managing everyday activities [84]. So, they lead him to burnout expressed by stress, alertness, anger, insecurity, brought by the disease and even "masked"/depressive symptoms which often occurred with somatizations and crying (complex psychological needs of I.P., long after recovering from severe COVID-19) [32,80]. He didn't know any other healthy way, other than through the above negative symptoms. Many patients under intense stress tend to behave in aggressive ways. Also, he was being vulnerable because of an existential shock: *he experienced fear of impending death, a borderline feeling*. This psychological burden was presented to all sessions, as even trauma, due to the serious and threatening disease and long length stay in ICU.

Depressive reaction to the diagnosis of COVID-19 and treatment of long COVID symptoms: Beck Depression Inventory (BDI) shows: he was moderately depressed before R. Pr. and Psychological Intervention. Depressive mood and somatic factors (fear of death, illness) are consequence of a process of adjustment to an infectious disease, like COVID-19 and long COVID symptoms which are very challenging stressors [85-88]. Depressive mood (loss of pleasure and physical activity, feeling of worthlessness, insomnia, poor concentration, agitation, obesity) and his sadness feeling (affective factor) developed long after his hospitalization when he begun to realize the demands of long COVID symptoms. **Specifically**, depressive mood was present –for a short period- before his participation in R. Pr and in the initial phase of diagnosis, he goes through the typical stages of grief [32]: a. denial and anger identical with injustice and dysfunction brought about by his sudden disease, b. depression as a process of adjustment to the disease and c. acceptance as an emotional process of multiple stages, depending on the stage of life, the demands of the disease and the individual's personality traits, in general. Many patients *redefine* it as a blessing [89,90], self-awareness and thankfulness for life. When the individual undertakes personal responsibility, the disease is incorporated into the individuals lifestyle and the burden is reduced [91].

Discussion

The course of adjustment to the complications of a serious disease, like COVID-19, is often damaging with potential effects, not only at an organic, but also at a psychosomatic level. The urgency of treatment and life change undermines the structure of the ego. There is no longer the "whole" person as the disease caused physical failure [32]. Being aware of the difference (the identity of the previous healthy individual) points out the loss of the previous identity and shakes self-esteem. Charmaz believes that chronic complications of a serious disease, create the world of

chronic disease, an inner natural "world" of the experiences of the disease, in contrast to the world of healthy [92]. Many mental problems had emerged, after the outbreak of COVID-19 and long COVID symptoms which are needed planning of Psychological Interventions for acute life events, like health emergencies [93].

So, people with a history of long COVID symptoms develop often somatic handicap, like the patient (I.P.) of the present study. This permanent stressor put him into greater risk for developing adverse psychological symptoms.

More specifically, before his participation in R. Pr., he was moderately depressed (Table 7), the most common clinical disorder in patients not only with long COVID symptoms, but also with other chronic physical illness [32,94]. In the initial phase of long COVID symptoms, his depression mood was a process of grief and adjustment to the disease which- if present for long periods- needed treatment [85]. His personal history of a threatening disease, such as severe COVID-19, long length of hospital stay (ICU), intubation, endotracheal tube, and problems in his family unity led him to accept the participation in the Psychological Intervention, as a part of the R. Pr. The psychological burden of these stressors was presented to all sessions in a clear way: *depressive mood due to unresolved mourning, borderline survival and fear of death*.

Table 7: Results of BDI

Results		
Before R.PR.	After R.PR.	Follow-up (1 year later)
18 (M.D)	11 (MI.D)	4 (N.D)

Furthermore, within his family context (wife and 2 adults daughters), there was severe dysfunction. There wasn't emotional interaction and support between them. Family context is related with the disease, as a powerful health predictor, because it functions as a motive for effective self-care of disease (physical activity, healthy eating, reduction of smoking), reinforces will and reduces patients' grief [95,96]. Instead of the above stressful situation, he managed to build positive interactions between him and health-care professions, as a substitute of his family. They related with a therapeutic target with his demands and priorities, indicating in that way an aspect of therapeutic relationship with him. In this sense, on one hand, he could express his needs even in question of health changes, while on the other hand, he stressed the need for a collaborative/human medical relationship, able to optimize the final therapeutic outcome.

Through psychotherapy sessions, he realized the importance of *redefinition* of his disease (based on pre/existing healthy personality traits). He stated that his survival from COVID-19 led him to positive feelings that he always had, such as strength, courage and fighting spirit. So, they acted as counterbalance and as a secondary unconscious benefit, however difficult it may be (reconciliation with the difficult parts of himself, such as his serious disease). Moreover, realizing his vulnerability, was able to appreciate life in ways he did not consider, before COVID-19 onset. The individual experiencing loss and grief for the healthy self that is lost, is pushed deeper into assessments of the self and the others [97]. The loss of health and the emerging pain teach and redefine the disease and life itself refer that a deeper awareness of a disease triggers internal processes [35,98,99]. Health and disease are complementary life cycles performing their own work, until changes and finally the balance within the individual are achieved [99]. Thus, the disease becomes a driving force for a deeper understanding of the self and others (illness as moral occasion), which mobilize sources of power to manage the difficulties [100]. Finally, instead of fear of death, he was thankful because he had a 2nd chance to life and celebrates it [101]. He was a *survivor*! Mental health clinicians working with life- threatening diseases and demanding environments, such as Covid-19 and long COVID symptoms, could include multidisciplinary teams in order to intake patients who have:

a. some pathological personality traits [84].
b. possible psychopathology
c. are 'at high risk of developing persistent neuropsychiatric deficits following recovery from acute disease' [102].
d. pre/ COVID-19 risk behaviors, such as smoking, lack of exercise and of healthy diet
e. overreact to stress (stress-reactive coping styles) and develop negative emotions in stressful situations, leading to loss of disease self-control (distressed personality) [32].

Over time, patients with a history of serious disease and long length of hospital stay, especially in an ICU, like the patient (I.P.) of the present study, come across complicated psychological challenges and a continuous process of adaptation with a new lifestyle that is not self-evident. Instead, it depends on psychosomatic parameters, every-day changes and life events. The proposed *Psychological Intervention, as a part of R. Pr*., focuses on this evolving process and simultaneously investigates the sequence and links of all these intermediate psychosomatic variables, relationships and emotions with the final therapeutic outcome. So, in the present study, our aim was to:

a. present and analyze in depth all these stages and therapeutic processes, accompanying the diagnosis of a severe COVID-19 and long COVID symptoms of an adult man,
b. explore his emotional reactions, long after the diagnosis of COVID-19 (when he begins to realize the reality and starts the process of adjustment), with emphasis on *depressive mood, as a consequence of the above processes*, and
c. recommend *Psychological Intervention as an integral part of Rehabilitation Programme* for COVID-19 patients because it combines medicine- that is the realistic aspect of the illness- with the psychology of the individualized patient needs, as well as the idiosyncratic patient manifestations. The above integration not only contributes to effecting management of the disease but also to quality of life, which are neither self-evident nor self-regulated.

Finally, further new evidence is required about long COVID, since is still "*enigmatic*". And research must continue about the combination of psychological with the caring of medical aspects of COVID-19 and long COVID symptoms, not only in ICU, but also in multidisciplinary Rehabilitation Programmes (R. Pr.), as well.

Acknowledgements
We thank the patient who consented to participate in the present study.

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