

Project Report

Psychological Care of Health Workers during the COVID-19 Outbreak in Italy: Preliminary Report of an Occupational Health Department (AOUP) Responsible for Monitoring Hospital Staff Condition

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Abstract: The recent worldwide COVID-19 outbreak provided a timely demonstration of the mental health needs of health care workers on the front lines of the response to the pandemic. In addition to international guidelines, local institutions demand rapid and practical approaches easily replicable in different populations and contexts. The principal aim of this paper is to highlight and share the experience of an Occupational Health Department responsible for monitoring hospital staff conditions during the SARS-COV-2 pandemic phase 1. The multidisciplinary team of the Occupational Health Department of a major university hospital in central Italy (AOUP) developed a specific protocol called *PsicoCovid19* in order to provide targeted help, based on new psychosocial risk factors, to workers involved in the COVID-19 emergency to preserve hospital staff health. As of the date of this report, 106 workers (79 female, 27 male, mean age respectively, 51 ± 9.8 , 45.7 ± 10.1) requested this service, reporting mild to moderate subjective distress. Approximately 81% of all the participants were already monitored before the outbreak of the pandemic. Among the total sample, 60% received a remodeling of a previous therapeutic program. Meanwhile, 7% passed from a psychiatric therapy to a combination therapy with the addition of a psychological treatment. The results demonstrate that those who asked for help were primarily female nurses who already presented with mental health vulnerabilities. A more gender-specific, clinical approach is needed.

Keywords: Covid-19; pandemic; health workers; occupational teams; multidisciplinary; psychological; psychiatric; combination therapy

1. Introduction

The current worldwide outbreaks of COVID-19 have demonstrated a dramatic gap in the current scientific literature regarding the mental health needs of health care workers to be addressed by occupational teams [1–3]. A recent literature review pointed out that there is a need to develop tailored mental health interventions which are time-limited, culturally sensitive, and can be taught to healthcare workers and volunteers [4]. Furthermore, the international literature highlights the importance of monitoring vulnerable populations since, besides the psychosocial strain, people with mental health disorders may be particularly vulnerable in the context of the SARS-COV-2 pandemic.

Regarding this, to the best of our knowledge, no experiences have been reported on active medical surveillance of health professionals with psychological disability [1–4].

The World Health Organization (WHO) itself said that the first step to protect the health of medical staff during an epidemic crisis is the implementation of all the necessary measures to protect their occupational safety. Accordingly, psychological intervention strategies are needed on a rapid basis, in addition to all the other necessary preventive and protective measures. [4].

Beyond the typical and frequent psychosocial risk factors closely linked to work organization, safety and health of health workers, such as shifts, on-call services, emergency management, years of understaffing, daily challenges dealing with situations of extreme suffering as well as potential risk of episodes of verbal and/or physical aggression, the new COVID-19 experience and the future coexisting with it will carry additional burdens for occupational preventive medicine [5–7]. During an epidemic, even when preventive and protective measures are adequate, healthcare professionals remain exposed to a high level of psychological and physical stress; fear of contracting the infection and passing it on to family members, high mortality, suffering from the loss of patients and colleagues, sometimes prolonged separation from the family, changes in work practices and procedures, the need to provide greater emotional support to patients in isolation, physical fatigue and frustration related to the prolonged use of protective devices [8,9]. Accordingly, it is essential to invest as much as possible to protect both physical and mental health. [10].

Although evidence-based international guidelines on how to manage mental health of health workers are now emerging, [11] local institutions need a more rapid and practical approach which easily applicable in different populations and contexts, or else there is a risk of not closing the gap between best evidence and best practice in light of the current unprecedented situation [10].

The pressing goal to preserve the mental health of medical staff in response to the COVID-19 outbreak may be hindered by fear, uncertainty, and stigmatization, which may act as barriers to effective psychological interventions [12,13].

Some authors opted for helpline services, usually applicable and effective for urgent social and psychological problems [14]. However, the challenge is to overcome, in a very short time, health workers' resistance to psychological programs, so the key to solve this issue lies in the mutual relationship between medical staff and occupational physicians, which is fundamental from a preventive medicine perspective.

The better way to gain worker compliance is combining the clinical issue with psychological support. Further, a multidisciplinary approach that includes both occupational physicians and mental health professionals can help workers to enhance their ability to follow prevention procedures in the context of occupational risks, including biological hazards [4,15–20].

In accordance with this view, the Occupational Health Department of a major university hospital, supported by hospital management, organized and conducted psychological and psychiatric interventions for health workers. In addition to the monitoring of physical symptoms, laboratory and microbiological tests, the Occupational Medicine Unit, through its multidisciplinary team, developed a specific protocol called: *PsicoCovid19*.

As far as we know, no one as yet has addressed, from the very beginning, the psychological concerns of medical workers related to the COVID-19 pandemic from this perspective—a multidisciplinary cyclical perspective that starts from the occupational physician, passes through psychologists and psychiatrists and then comes back to the occupational physician.

PsicoCovid19 is an interventional protocol with two main aims. One is to monitor workers who already suffered from psychiatric and psychological problems prior to the pandemic, and were already followed by the team in order to reduce potential COVID-19 risk factors. The second is to provide rapid and targeted help, based on the new psychosocial challenges, to workers involved in the COVID-19 emergency.

The objective of this paper is to highlight and share the experience of an Occupational Health Department responsible for monitoring hospital staff conditions during SARS-COV-2 pandemic phase 1. The second intent is to analyze first insights emerging from the application of the *PsicoCovid19* protocol.

2. Materials and Methods

The *PsicoCovid19* intervention group belongs to an Occupational Medicine Unit and is directed by an occupational physician who coordinates 3 psychologists and 1 psychiatrist; the whole team has specific experience in work-related stress and emergency management. The organization of this occupational multidisciplinary team is described in Figure 1.

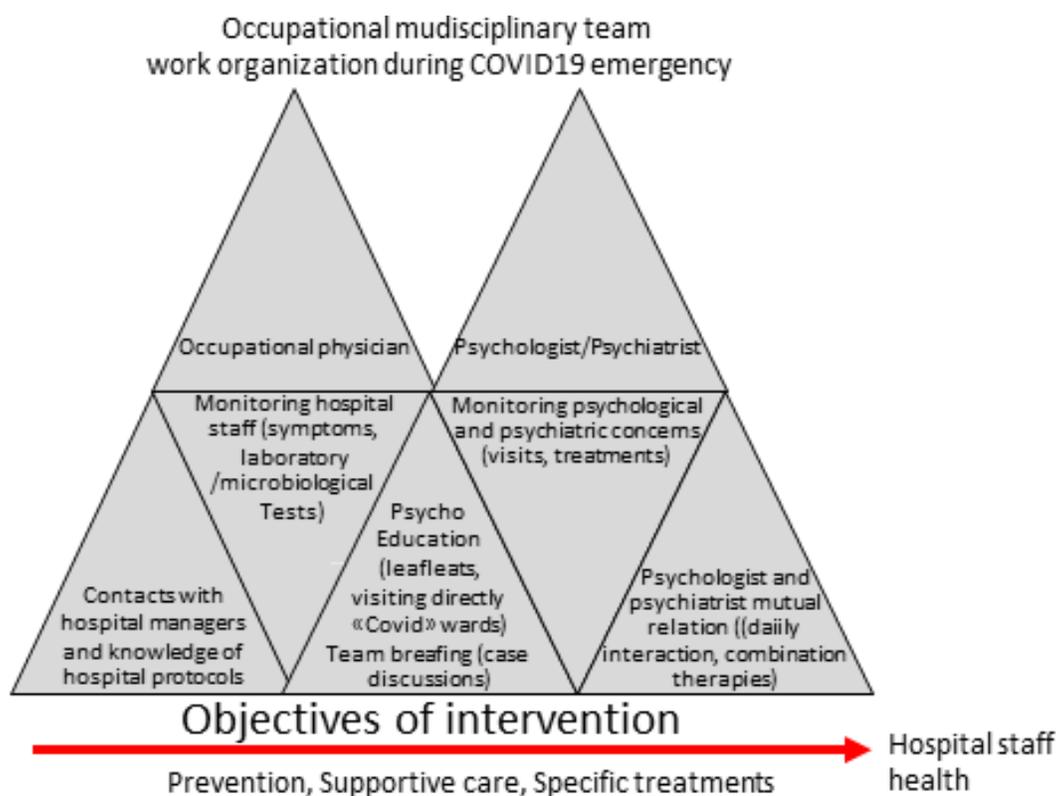


Figure 1. Team work organization.

2.1. Procedures

Beginning March 25th, the team launched a dedicated email address to allow healthcare professionals to freely make fast and anonymous contact.

The dedicated email address is handled by two psychologists, in charge of carrying out the triage phase by a phone call to all those who sent a request. Fast and effective identification of the emotional and stress problems of individuals is an important basis for psychological intervention. Accordingly, during the initial call, targeted communication strategies are used to promote openness and emotional availability [21]. A preliminary anamnestic sheet is administered, together with fast self-assessment questionnaires (STAI-Y1, STAI Y2, BDI) [22,23] about the presence and severity of previous and current psychological symptoms. Fulfilment of the questionnaires was considered consent to share data. In the case of a patient who has a previous psychiatric diagnosis, or is taking a psychopharmacological medication, the psychologists direct him/her towards a psychiatric consultation; in the absence of prior psychiatric illnesses, a psychological consult is recommended. Once the triage process is concluded, the information about the first assessment is forwarded to the referred psychiatrist or psychologist.

2.2. Screening Questionnaires

To gather preliminary data about workers' psychological experiences, we decided to deliver the following self-administered questionnaires.

The Beck Depression Inventory- II [22] is a 21-item self-report depression screening measure in psychiatric and non-psychiatric population among adults and adolescents.

Respondents are instructed to choose the alternative that best describes how they have been feeling throughout the past 2 weeks. Each item is rated on a 4-point Likert-scale ranging from 0 to 3, with higher scores indicating higher levels of depression.

The maximum total score for all items is 63. Scores ranging between 0 and 13 denote "minimal" depression; scores of 14 to 19 are considered "mild" depression; scores of 20 to 28 denote "moderate" depression and a score ranging from 29 to 63 denote "severe" depression.

The BDI-II inventory measures two different domains of depressive symptoms: somatic-affective and cognitive. The somatic-affective factor collects the somatic-affective manifestations of depression (loss of interest, loss of energy, changes in appetite and in sleeping patterns, agitation and crying, etc.); the cognitive factor concerns the cognitive manifestations of depression (such as pessimism, guilt, self-criticism and self-esteem, etc.).

The State-Trait Anxiety Inventory (STAI) [23] is a commonly used measure of trait and state anxiety.

The STAI-Y is divided into two scales (Y1 and Y2). The State Anxiety Scale (Y1) evaluates the current state through questions related to how the subject feels at the time of the questionnaire's administration, using items that measure subjective feelings of apprehension, tension, nervousness, worry, and activation/arousal of the autonomic nervous system.

The Trait Anxiety Scale (Y2) evaluates relatively stable aspects of "anxiety proneness," including general states of calmness, confidence, and security.

Both scales are made up of 20 items and all items are rated on a 4-point Likert-scale, from "not at all" to "very much so"; higher scores indicate greater anxiety. The total score is between 20 and 80 with a predictive threshold value of anxious symptomatology set at 40. According to a scalar criterion, it is also possible to define the level of severity: from 40 to 50, "mild" form, from 50 to 60, "moderate, over 60, "serious". BDI, STAI-Y1 and STAI-Y2 total scores have been used as a treatment outcome measure, to be repeated in the future according to a test-retest design throughout a 6 month study period.

2.3. Psychiatric Consulting

The psychiatric approach can be divided into two actions: the monitoring of psychopathological parameters and of the related psychiatric therapies in health workers already under psychiatric treatment since before the COVID-19 outbreak. In the same subgroup of workers is also evaluated employee's fitness for work in "COVID" or "non-COVID" units in relation to the specific needs of the worker and of the current emergency. In the event of any of suitability problems, the worker is reported to the hospital occupational physician to evaluate any safety and preventive measures.

The second action concerns the workers reported to the psychiatric attention by the psychologists of triage.

In this second case, symptoms belonging to specific Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychological Association [APA], 2013) DSM-5 diagnostic categories will be assessed, principally anxiety disorders but also mood and other disorders. Symptoms reported (such as insomnia, restlessness, difficulty concentrating, low mood and tiredness) will be approached from a post-traumatic stress perspective. Specific treatment strategies will be recommended and follow up assessments will be scheduled. In urgent cases, the psychiatrist could be contacted quickly through the dedicated email.

The remodulation of psychiatric therapies takes some particular COVID19 era aspects into consideration:

- working on a "COVID" or "non-COVID" ward;
- having contracted the Sars-Cov-2 infection;

- ⊙ working exclusion due to temporary COVID19-related unfitness
- ⊙ having a poor tolerance to personal protective equipment (PPE).

Particular considerations for health care staff infected by Sars-Cov-2 and experiencing psychiatric symptoms such as anxiety, fear, depression, insomnia, which can be difficult to discern from antiviral treatment side effects, must be taken into account. In this regard, many patients will require psychiatric medications including antipsychotics, antidepressants, and anti-anxiety drugs, while also using specific drugs against COVID-19, such as antiviral or anti-inflammatory medications. The most consistent best choices seem to be drugs that either do not act on the cytochrome P450, or have a minimal effect on it [Evidence based Psychiatric Care-Psicofarmaci e COVID-19—Società Italiana di Epidemiologia Psichiatrica (SIAEP)].

2.4. Psychological Consultation

Psychological consultation was designed in the same manner as psychiatric consultation, divided into two actions: a group of workers under treatment since before the COVID-19 outbreak, and a group of workers reporting the onset of psychological discomfort.

As commonly shared in the literature, the psychologist focuses extensively on psychotherapy and treating emotional and mental suffering in patients through behavioral interventions. Rapid transmission of the virus between people hinders traditional face-to-face psychological interventions, so that, in respect of social distancing rules, the provision of online mental health services has been implemented; accordingly, a strong attention was given to optimize the physical and emotional environment in order to establish trust, stability and comfort and to make people at ease to address their uncertainties and fears (Caring for Patients' Mental Well-Being During Coronavirus and Other Emerging Infectious Diseases: A Guide for Clinicians, CSTS, Department of Health & Human Services).

The referred psychologist adopted a scientific research-based cognitive-behavioral approach to psychological disease and crisis management [24,25].

Suitable intervention strategies were chosen based on the screening data collected through the triage process, together with a deeper investigation that included information about personality pattern, emotional regulation ability and cognitive flexibility.

As previously described, hospital staff are likely to report emotional exhaustion, detachment from others, grief, fear, anger, guilt, deteriorating work performance, and reluctance to work or consideration of resignation. Consistently, the therapeutic approach was designed with the following aims:

- ⊙ improvement of emotional and cognitive resource use to reinforce the sense of altruism, and to face anxiety and fear of contagion or death;
- ⊙ improvement of awareness of factors within and beyond personal control to achieve a functional appraisal of what the epidemic actually represents;
- ⊙ training emotion regulation skills and acceptance-based abilities; and
- ⊙ restoration of personal resilience in the face of stress.

To meet these goals, a cognitive-behavioral (CBT) approach has been chosen. CBT is a kind of psychotherapy that concentrates on the way people think about a situation. In other words, people's emotions are influenced by the way they think, and it helps people to know their thoughts, feelings, and attitudes that impact on their behavior [21]. CBT is commonly a short-term training and during the training period, comprising between 8 and 12 sessions, one can learn how to recognize and change the destructive and disturbing feelings and patterns that have negative impacts on behavior. There is a strong emphasis in CBT to express the concepts operationally and empirically validate the therapy. Most treatments took place pursuant to the "here and now" technique; the primary goal was to help the patient in a way that he/she can bring some favorable changes in his/her life. Therefore, during the therapy, people will learn to recognize emotions such as anxiety or anger, as adequate and normal for all persons (validation and normalization), reducing subjective attributions of inadequacy, unfair suffering, or feelings of an overwhelming sense of urgency and impending doom, which underpin intolerance for frustration to attend unfortunate but unavoidable events.

Patients are guided to be aware of their thoughts about the epidemic [25], how to recognize those thoughts that cause their feelings and actions, and they will also be provided with an opportunity for new adaptive learning and making some changes to be gradually integrated in the daily work.

In the frame of CBT approaches, positive psychology techniques [26] have been integrated to motivate individuals to see themselves as skillful and as having capabilities and resources to spend to reduce pain and suffering, to resolve concerns and conflicts, to empower one's own resilience and more efficiently cope with stress. Furthermore, patients are encouraged to do their best in the direction of their own values and goals, even in a negative situation, increasing their altruism and sense of community, and thereby reducing feelings of guilt.

Third-generation CBT approaches, such as mindfulness and acceptance and commitment therapy (ACT) [27], were integrated into our *Psicocovid19* protocol to help people to embrace their thoughts and feelings, rather than fighting or feeling guilty for them; this develops psychological flexibility, helps people to commit to facing the problem head-on rather than avoiding stressors, and prompts people to consider one's own life at the present time, according to what is meaningful to each of us.

2.5. Team Briefing

The *PsicoCovid19* group meets 3 times a week to share information about patients' clinical conditions on a continuative basis, and make choices about treatments.

The psychologists, the psychiatrist and the occupational physician have multidisciplinary discussions whose purpose is not only to discuss about patients' psychological concerns, but rather to achieve an optimal integration of the patient's clinical condition and working fitness. In other terms, the briefing phase allows the team to estimate if one's psychological condition is suitable to perform the assigned work duties in the hospital ward safely.

Finally, dedicated support was planned for newly hired employees (doctors and nurses) recruited to integrate the workforce during the outbreak. Since they are required to carry out a high complexity job at a young age, most of them present a high risk of losing emotional balance in the face of many unknown situations. The intervention study protocol is described in Figure 2.

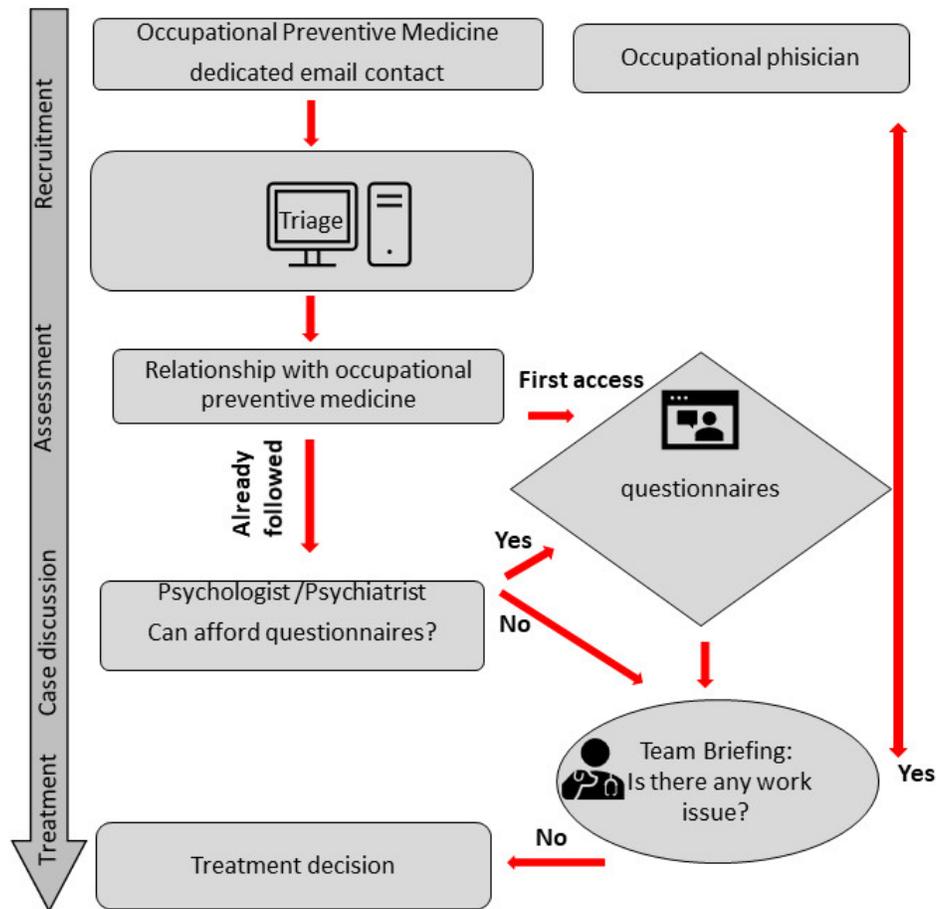


Figure 2. Flowchart of the *PsicoCovid19* protocol.

3. Results

3.1. Overall Sample Characteristics

During phase 1, we report an overall service request of 106 workers (on a total hospital staff amount of 8000 individuals, including trainee students). Among the total sample, 79 were female and 27 were male, with a mean age, respectively, of 51 ± 9.8 , 45.7 ± 10.1 . To date, 44 workers also sent back completed self-administered questionnaires. Table 1 and Table 2 describe the characteristics of the participants.

Table 1. Sociodemographic and clinical characteristics of total sample (N = 106) and divided by gender, female (n = 79) and male (n = 27).

	Total Mean \pm SD; Range	Female Mean \pm SD, Range	Male Mean \pm SD, Range	P
Age (years)	50 \pm 9.9; 28–66	51 \pm 9.8; 28–66	45.7 \pm 10.1; 30–65	
	N; %	N; %	N; %	*P
Hospital staff roles				
• Nurses	58; 55	42; 53	16; 59	0.000
• Medical staff (consultants/residents)	7; 7	6; 8	1; 1	0.061
• Administrative staff	12; 11	8; 10	4; 15	0.248
• Patient services assistants/porters	13; 12	12; 15	1; 4	0.002
• Biologists	1; 1	1; 1	0; 0	0.563
• Technicians staff	15; 14	10; 13	5; 19	0.196

**p* < 0.05.

Five groups out of 6 were almost homogenous, although there were proportionally more technicians and personal service assistants rather than doctors. Globally, nurses were the most represented group, with 55% of the persons surveyed.

There were also statistical gender distribution differences regarding nurses and health care assistants, with women most in need of help (nurses, *p* < 0.000; health assistance, *p* < 0.002).

Table 2. Baseline psychopathological characteristics of the sample (N = 44).

Questionnaires	(N = 44) Mean \pm SD	Males (N = 12) Mean \pm SD	Females	Normative data^ (Males, Mean \pm SD)	Normative data^ (Females, Mean \pm SD)
			(N = 32) Mean \pm SD		
BDI	9.7 \pm 2.1	8.6 \pm 3.1	10.8 \pm 4.3	< 10	< 14
STAY-Y1	42.7 \pm 11.4	38.5 \pm 6.4	44.7 \pm 7.4 *	36 \pm 9.7	39.9 \pm 11
STAY-Y2	42.1 \pm 8.7	33.6 \pm 7.6	40.1 \pm 8.2	36.5 \pm 9.6	41.3 \pm 9.7

According to Pedrabissi and Santiniello (1989); **p* < 0.05.

Forty-four workers (12 men, 32 women) were also screened through specific questionnaires and all of them returned the completed tools. Analysis among them revealed that most workers presented with mild to moderate distress [BDI mean score 9.7 \pm 2.1 (85° percentile); STAI-Y1 mean score 41.6 \pm 11.4; STAI-Y2 mean score 36.8 \pm 8.7], with females displaying significantly higher scores for STAI-Y1 (state anxiety).

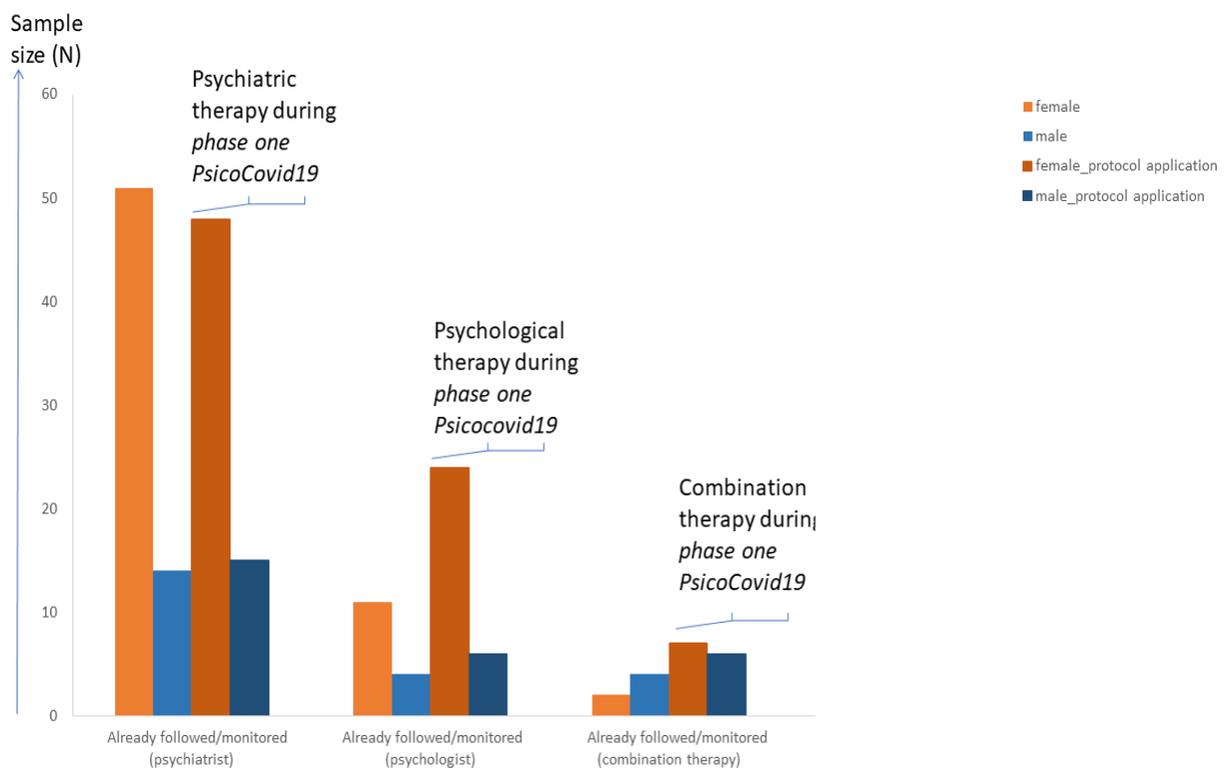
Analysis of the clinical characteristics of the total sample revealed that approximately 81% of all the participants were already monitored by the team before the pandemic outbreak. In particular, 61% followed psychiatric treatment, 14% psychological treatment and 6% combination treatment.

After asking for help through *PsicoCovid19* triage, most of these subjects underwent a modification of the therapy according to the characteristics of the *PsicoCovid19* protocol.

Additionally, 60% of the total sample received a remodeling of a previous therapeutic program. In particular, 7% passed from a psychiatric therapy to a combination therapy. Their clinical concerns and characteristics are shown in Table 3 and Figure 3.

Table 3. Clinical concerns of total sample (N = 106) and divided by gender, female (n = 79) and male (n = 27).

	Total N; %	Female N; %	Male N; %
Health worker's relationship with Occupational Preventive Medicine			
• Already followed/monitored (psychiatrist)	65; 61	51; 65	14; 52
• Already followed/monitored (psychologist)	15; 14	11; 14	4; 15
• Already followed/monitored (combination therapy)	6; 6	2; 2	4; 15
• First access	20; 19	15; 19	5; 18
New treatment intervention following case discussion			
• Psychiatric	63; 60	48; 61	15; 56
• Psychological	30; 28	24; 30	6; 22
• Combined	13; 12	7; 9	6; 22

**Figure 3.** Clinical characteristics of the sample and after *PsicoCovid19* protocol application.

3.2. Workers' Psychiatric Concerns

Among this group, 94% already knew the psychiatrist of the team and for 6% it was a first access (one subject was hospitalized for COVID-19). Of the whole sample, the majority complained of difficulties with PPE (anxiety, panic attacks etc.) and sleep problems (mainly difficulty falling asleep). Some reported worsening of their previous psychiatric disorders because of different COVID-19 psychosocial risk factors. Four patients were temporarily excluded from work due to temporary COVID-19-related unfitness, four presented with SARS-COV-2 infection (one of whom presented positive results from the COVID-19 swab test and, accordingly, was required to undertake a consequently prolonged self-isolation), and one health worker faced the death of her spouse as a result of COVID-19. The characteristics of the present group are summarized in Table 4.

Table 4. Psychiatric consulting (N = 65).

Number of PsicoCovid19 Psychiatric Visits during Phase 1	Work Temporary Exclusion	Sars-Cov-2 Infection	Family Members died for COVID-19	Psychosocial Risk Factors reported	First access characteristics
3 workers: 6 access	1 worker: decompensated diabetes	1 worker: asymptomatic/ still positive (3 months of self isolation)	1 worker: husband	Excessive workloads	1 worker: Agitation and insomnia during hospitalization
5 workers: 4 access	2 workers: severe lung disease	2: mild symptoms (now negative)		Conflicting demands	2 workers: panic attacks, somatization, insomnia
10 workers: 3 access	1 worker: severe oncological disease	1 worker: Hospitalized in ICU (still positive)		Lack of involvement in making decisions that affect the worker	1: O-C symptoms related to possible contagion (temperature and saturation measurement)
23 workers: 2 access				Poorly managed organizational change Difficulty managing patients anxiety and loneliness	
24 workers: 1 access				Job insecurity Fear of contagion	

Legend-ICU: Intensive Care Unit;O-C: Obsessive-Compulsive symptoms.

3.3 Workers Psychological Concerns

Workers referred to the *PsicoCovid19* psychological service complained of emotional distress, mainly characterized by anxiety, as a manifestation of both the fear of contagion (62%) and of isolation (71%), anger (22%), fatigue (66%), irritability (67%), cognitive dysfunction (19%), rapid mood swings (12%), and often in association with a lack of metacognitive abilities and of coping strategies to face such as a stressful situation. Some (9%) reported difficulties in work relationships, characterized by a lack of communicative skills and of stress management strategies. Meanwhile, 12% also underwent psychiatric consulting and received a psychiatric diagnosis and treatment with regular follow-up indications.

Notably, 54% of the sample reported anxiety and concern for human issues following the experience of COVID patient assistance, which entails the elicitation of uncomfortable emotions mainly triggered by:

Exposition to life-threatening situations and ineluctable deaths;

Rising perception of the vulnerability of the human condition.

Interestingly, only a minor group reported trauma spectrum complaints (7%).

Previously followed patients (14%) showed an overall adaptive psychological reaction to the pandemic with only mild adjustment symptoms related to the fear of contagion and to self-isolation (72%); among them, particular attention was dedicated to two cases of workers affected by a psychological disability (4%), with temporary unfitness for work, displaying a video-CBT training that promotes the learning of self-regulation skills to plan free activities at home with the goal of contrasting feelings of insecurity and worthlessness.

In two cases (4%), workers were affected by a severe oncological condition that worsened depressive feelings, fear of a life-threatening situation and social disengagement.

As a therapeutic strategy, the psychologist and the patient designed and shared therapeutic aims to be achieved, mainly oriented around enhancing emotion regulation skills, cognitive and behavioral flexibility to face stressful situations through CBT interventions (96%), as illustrated in Methods;

in some cases, the administration of mindfulness and self-relaxation techniques, within ACT and positive psychology protocols, was also seen as appropriate (67%), as illustrated in Methods. Patients affected by depressive and apathetic moods underwent behavioral reactivation training before practicing CBT and ACT.

3.4. Satisfaction Rate

Our sample patients reported an overall satisfaction for the *PsicoCovid19* service reported by nursing and medical staff coordinators. In particular, they appreciated being treated by professionals belonging to their own organization, with whom they can share common experiences and concerns. Some workers reported that they not only learned how to tackle their emotional distress but also shared tips with colleagues in order to help them tackle similar issues.

4. Discussion

The *PsicoCovid19* protocol was designed with the aim of providing a rapid response to the emotional urgency of health professionals on the front lines of the COVID-19 pandemic in Italy [11,28]. Recent warnings have estimated both a surge in the number of newly diagnosed mental disorders and a worsening of those with existing difficulties in the aftermath of COVID-19 [29,30].

Some authors estimated how multidisciplinary approaches, already used in the 2002-2004 SARS outbreak, were revealed to be helpful to support health workers during that epidemic disease [31].

In order to reduce the risk of negative psychological outcomes caused by the COVID-19 outbreak and promote social stability, the National Health Commission of China (NHC) issued the 'Principles for Emergency Psychological Crisis Intervention for COVID-19 Pneumonia Epidemic' (National Health Commission of China. Principles for Emergency Psychological Crisis Intervention for COVID-19 Pneumonia Epidemic) [32].

These literature data brought us to consider our service, which comprises psychologists, psychiatrists and occupational physicians, as the most adequate to support the current emergency. We primarily monitored hospital workers with mental health concerns which are considered, from an occupational perspective, a vulnerable hospital population in two ways. They are at risk of worsening their disorders due to the new psychosocial strain imposed by COVID-19, and they are also at risk of not correctly following the hospital procedures necessary for COVID-19 prevention. [4,17-20]

The percentage of workers who turned to the *PsicoCovid19* service in the months of March and April (Italian COVID-19 phase1) was mainly represented by hospital workers who already had mental health vulnerabilities, not only for a real worsening of their disorders but also for a greater awareness of personal vulnerability and perhaps also because they already knew our team. It is noteworthy that individuals already in psychiatric therapy asked for psychological integration to cope with phase 1 of the emergency.

The present clinical experience suggested the idea that the bias which has slowed the access to psychological interventions put in place by colleagues all over the world so far can be at least partially explained by a lack of psychoeducation of health care workers [29]. According to cognitive-behavioral theories, coping with anxiety by suppressing disturbing thoughts can lead to a disturbance of "executive control" of behavior (the so called metacognitive ability); in these cases, perseverative worry and rumination are common and inflexible coping styles for stress and anxiety that fail to activate adaptive self-beliefs (such as "I know that my uncomfortable emotions are a normal reaction to an abnormal situation") and behaviors, such as psychological consultation [33].

These observations are in line and comparable with the Chinese experience where medical staff were reluctant to take advantage of psychological interventions provided to them [11,13]. It was reported that workers presented psychological distress but claimed they had no need to be helped [11,13], as evidenced by Chen and collaborators [13], in Wuhan (Hubei, China). The Chinese colleagues redesigned their original protocol to include the provision of a rest area, care for basic physical needs such as food, training on the care of COVID-19 patients, information on protective

measures or hospital leisure activities which resulted in greater satisfaction among health care workers. Nevertheless, they could not manage to specifically address mental health concerns of healthcare workers, especially those with mental health disorders [4].

The *PsicoCovid19* team, already aware of these observations from China, elected not to promote immediate interventions designed for everyone but to wait for individual requests from workers and to help them from an occupational (and non-pathological) perspective promoting activities with the aim of promoting the psychoeducation of medical staff through the use of leaflets and specific (and sometimes personalized) communications described by the occupational physician himself directly visiting the ward personnel deputed to the COVID 19 emergency. However, it seems that these strategies also did not have the expected result and will need to be modified.

Despite expectations of finding numerous cases of trauma-related feelings, as reported in the literature [34,35], most psychological interventions were implemented to meet patients' cognitive and emotional needs at a time of overwhelming events. In addition, patients reported that the COVID-19 experience prompted a unique opportunity to look at critical life events from a different perspective, encouraging people to improve their coping abilities.

The *PsicoCovid19* protocol also included mindfulness-based and relaxation techniques: patients appreciated having the possibility to take some free time for themselves and to be guided to practice relaxation techniques, integrating them progressively in their daily routine.

There was also a low percentage of responses to the self-assessment questionnaires, which is probably largely attributable to the design of the study, providing that the questionnaires were to be completed immediately after a request for help. Furthermore, in some cases, there were no conditions for asking, since the risk was the loss of the therapeutic alliance with a possible dropping out from the *PsicoCovid19* protocol.

Collected data also demonstrated that those who asked for help were primarily female nurses, a finding that is in line with the international literature that recognizes female gender as a risk factor for post traumatic distress [36]. The literature is in agreement that in the acute phase of a traumatic event, women generally score higher than men on acute subjective responses. Women handle stressful situations differently and have evolved differentially to support these different behaviors. Emotion-focused, defensive and palliative coping are more prevalent in women, while problem-focused coping is higher in men. Women seek more social support, the lack of it being the most consistent predictor of negative outcomes of trauma [37,38].

Screening test scoring (STAI-Y1 and Y2) also shows that the women in our sample are significantly more likely to develop anxiety than men, further confirming the difference in reacting to life events and in coping strategies; according to the literature, women are more likely to ruminate about them, which can increase their anxiety, while men engage more in active and problem-focused coping [39].

It is evident that beyond typical psychosocial risk factors, COVID-19 has presented and will continue to present an additional burden for the Occupational Medicine Unit. As a result, we believe that sharing data about specific hospital experiences is fundamentally important [8].

The results of the current study should be interpreted in light of several limitations. First, the limited sample size cannot be said to have epidemiological value. To generalize our considerations and have an adequate view of the effectiveness of the service, we have to wait for longitudinal outcomes.

5. Conclusions

The results suggest that there is a need to improve hospital staff psychoeducational strategies (seminars, videos and similar tools) in order to encourage health care workers to empower their emotional and cognitive skills. It seems important to normalize psychological education, in addition to clinical and instrumental education that has been the traditional focus. Collaboration between psychiatrists and specialities from other branches of medicine, as well as with local authorities and health workers in the community, is essential, and closely linked on the availability of trained manpower and infra-structure.

Furthermore, since women who already had mental health vulnerabilities seem to be more vulnerable, it is recommended to adopt a more gender-specific, clinical approach (specific group therapies).

The next step will be to redirect and improve the present approach based on these initial insights and to test the effectiveness of our phase 1 protocol with a specific survey.

The long-term intent is to establish and refine an easily replicable protocol to assist Occupational Health Departments with the new challenges represented by SARS-COV-2.

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