



## Case Report

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## A case report of a Covid19 survivor –The Impact of the psychosocial burden on respiratory status

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### Abstract

The psycho-Social assault has more than a few substantial effects on the physical or somatic state of the human being. In our clinical practice often we find cases where the life-threatening situation appears owing to psycho-social issues. Along with the general people, this might also touch frontline health practitioners. Many studies in recent times explored that frontline health practitioners expressly females have a greater fear of the pandemic situation which made them being more defenseless for infection. Hence the study was aimed to share practical experience regarding the management of psychological issues along with the physical problem. This article also described the scientific correlation of psychosocial concerns with somatic involvement from different scholarly articles. The Case: The case was about a 29 years old female physician who had acute shortness of breath followed by a few psychosocial issues. Those instigated abrupt arousal of the symptoms and were efficaciously managed by advice and few physiotherapeutic interventions which were administrated by one of her family members. The entire treatment session was conducted through telecommunication (Video call) with one physiotherapist and the symptoms were minimized in a single session of 1 hour followed by a follow-up session after 3 days. Conclusion: An expert reasoning, psychological counseling along with positioning and breathing control techniques successfully helped to reduce the shortness of breath in the selected case. Therefore careful history taking is crucial in the management of sudden illness.

**Keywords:** Respiratory illness, COVID- 19, psychosocial incident

### Background

Since the commencement of The SARS-CoV-2 pandemic, people throughout the world are witnessing a different social environment. This environment can be better pronounced as an environment full of stigma, prejudice, and fear. Psychological mediators such as sadness, worry, fear, anger, frustration, guilt, loneliness, nervousness are strongly triggered by the Pandemic related social distancing, isolation, and the negative attitude of society. In extreme cases, these may lead to the suicidal incidence among a few individuals [1]. The current Pandemic introduced a massive illness and fatalities since the virus was spreading very fast from the initial cases which were detected in Central China in December 2019 [2]. Human coronavirus emerged in this globe for many years but the COVID 2019 often called the Nobel coronavirus which is a new strain and has a rapid spreading ability. This knowledge of the human being imposed a fearful or panicked situation globally. Various horrifying videos, pictures are circulating through social, print and other Media are making the situation worse. In India, a 50-year-old man committed suicide in the Chittoor district of Andhra Pradesh on 12th Feb 2020 due to fear of spreading the virus among his family members [3]. A 36

years old man from Gaibandha, Bangladesh killed himself. It was found to be due to the social isolation and the negative attitude of society toward him [4].

There are several significant effects of the psychosocial assault on the physical or somatic state of the human being. In our practice often we find many cases where some life-threatening conditions appear due to the psychological issue. Along with the general people, we have also found some frontline professionals such as Doctors, nurses, police, policymakers who were in much more fearful condition which made them being more vulnerable to infection. A study revealed that in China, somatization, depression, anxiety, terror, and sleep disorder were higher in the front line medical staff who worked in COVID-designated hospitals than those who worked in non-designated hospitals. They also found that general strengthening exercise improved the mental status and sleep quality of them [5]. Another study found a high occurrence of anxiety and fear among healthcare professionals which were also found higher in female health professionals therefore appropriate psychological or psychiatric intervention was recommended [6].

From the several attended cases, the following case was selected by the investigator due to its success from the physiotherapeutic intervention which will also be worth to share among the other health professionals. The study described the entire journey of a COVID survivor who was a frontline medical practitioner and worked in a COVID-non-designated hospital and was cured with medication and physiotherapy.

### **Case Description**

Mrs. X, twenty-nine years old lady is a doctor. She works as a general practitioner in a private hospital in Bangladesh which is a Non-COVID dedicated hospital. She used to treat more than fifty patients per day. In the middle of May 2020, she started to feel sick with flu-like symptoms. It was less severe for the initial 3 days. She had a very low-grade fever, headache, nasal congestion, mild abdominal discomfort with frequent dry cough. Her general health was good with no comorbidity. She provided her sample for the COVID test on the 2nd day of her sickness. Though she was suspecting herself to have the viral infection she had a little hope to be unaffected. She was very confused about the situation. She took official sick leave and maintained home isolation. She was quite stable up to day three. On day four, her test result was found to be positive. The same day she maintained very strict isolation from the other family members. She was taking an antihistamine, Antibiotic, Vitamin C tablet, Zinc, and also tried some traditional home remedies. She used to live in a very crowded place where many of her neighbors were well-versed in her situation. The neighbors then exhibited a very negative attitude towards them. The house was locked down by the local police. Her family members were not allowed to go outside at all. Her relatives were not interested to communicate. Some of her neighbors left the house on the same day. She was shocked by the Nobel situation. She used to be admired by all of her closest, family, friends which were transformed dramatically. She started to feel some breathlessness on day five. She called a friend who was a physiotherapist and wanted her suggestion. The physiotherapist advised her to check her oxygen saturation level. The oxygen saturation level was decreasing gradually below 93%. The same night she felt very sick with Shortness of breath, profuse sweating, blurring of vision, severe thrust sensation, and muscle pain especially her shoulder girdle, low back, and leg. Her oxygen level dropped to 80% in the middle of the night. It was impossible to transfer her to the hospital at that time. She called the physiotherapist again. Over the telephone, she took a detailed history of the overall situation of her husband. He was asked to measure her PR, RR, O<sub>2</sub> saturation (Pulse oximeter) by the instruction of the physiotherapist (Table-1). She found that she was quite alright throughout the time but since she heard about the social isolation and faced the

undesirable attitude of her surroundings, she started to get sick, and gradually it was worsened. The level of anxiety and dyspnea were also assessed by the physiotherapist (Table-1). The physiotherapist advised her to lie down in a prone position in bed immediately with the head rotated to one side. Try to breathe normally. Her husband was told to apply muscle release technique over shoulder girdle, neck, back, and leg which were instructed by the physiotherapist by video calling option. After about 10 to 15 minutes she started to feel better. Then she was brought to a semi-reclined position and was instructed to do some breathing control exercise. Throughout the whole treatment session, the physiotherapist talked to her, assured her, and did very good psychological counseling. The total timing of the session was 1 hour which constituted intermittent breathing control exercise, positioning, relaxation, and psychological counseling.

She was quite normal after about 1 hour and slept at night without any complications. She recovered from her symptoms following 1 week. After 2 weeks she had another test and was found negative. She didn't have any panic attacks within this time. She was advised to do the breathing exercise regularly 3 times a day and to perform moderate aerobic exercise at her house. She was very grateful to her physiotherapist friend and acknowledged her to her other hospital colleagues.

### **Discussion**

The case has described that an acute exacerbation of respiratory distress could be life threatened if it was not managed in proper time. It was also found that the attack was entirely triggered by psychological issues. The psychosomatic effect was well known to medicine since ancient Greek [7]. A disease of unknown cause was often thought of as the consequence of Psychological and moral malady such as tuberculosis in the 19th century. Present science does not deny this completely as they claim that poor psychological states such as stress or anxiety can act as a predisposing factor in the development of tuberculosis [8]. A study found a higher level of hostility or aggressive behavior is associated with a rapid decline in lung function including FEV<sub>1</sub> at about 9ml/year in older individuals. A review found that psychological factors such as stress, anger, fear harm immune function, and psychosocially mediated immune deregulation may lead to disease of lung, heart, osteoporosis, arthritis, type 2 diabetes, certain cancers, frailty, and functional decline [9].

Table 1: The Variables in response to treatment

Session	Variables	Before intervention	Intervention	After intervention
1 <sup>st</sup> session	Pain	NPRS-6	Prone positioning Psychological counseling, Breathing control exercise Muscle Release Technique  Total 1-hour session	NPRS- 4
	RR	22/min		15/min
	P R	110/min		100/min
	O2 Saturation	92% to 80 %		95 %
	Fear/anxiety	HARS-27/ 3		HARS-13
	Dyspnea	NYHA scoring-4		NYHA-2
	Profuse sweating, blurring of vision, severe thrust sensation	Present in a significant amount		Sweating, blurring of vision and thrust sensation disappeared
<b>Follow-up session 3 days after</b>	No symptoms	-----	She was advised to do the breathing exercise on regular basis 3 times a day and to perform moderate aerobic exercise at her house.	She was mentally stable without having a subsequent panic attack. She was convinced and wanted to continue exercises to maintain better health status. She was grateful to the physiotherapist.

Pro-inflammatory cytokines are greatly influenced by stress or anger [10]. As anger and stress influence the immune function, they might also cause the development of secondary asthma [11], hypertension [12], upper respiratory infection [13]. SARS-CoV, MERS-CoV, and SARS-CoV-2 have a relatively higher mortality rate than any other type of coronavirus due to the association with the cytokine storm which is the abnormal immune or inflammatory response against the virus [14]. Besides, psychological or physical stress increases inflammatory proteins even in the absence of pathogen which is called sterile inflammation [15]. In that case, treating only with antiviral therapy may not be sufficient. Therefore an anti-inflammatory therapy is often recommended [16]. An empirical study found that severe acute respiratory syndrome (SARS) in 2003 in Hong Kong caused several psychiatric complications in the acute phase which were treated successfully by the behavioral and verbal response of the health care providers. Besides social support, positive appraisal, self-efficacy played an important role in the control of those psychiatric disorders [17]. Many physiotherapy interventions are restricted such as diaphragmatic breathing; pursed lips breathing; bronchial hygiene, lung re-expansion techniques, incentive spirometer; manual mobilization/stretching of the rib cage; nasal washings; respiratory muscle training; exercise training; mobilization during the acute exacerbation of respiratory symptoms or the clinical instability.

Prone position and relaxation are found to be effective in this stage [18]. There are several health precautions which are recommended by the competent scientific world where specific guideline for a specific group of people is provided. It was declared by the scientific community that the Nobel coronavirus has a virulent air-born transmission therefore the facial openings play an important role as the dominating route of transmission. Several mitigation strategies have proven to be effective in the control of virus spread. Mandated Wearing protective mask alone significantly reduces the number of infectious people in many countries like Wuhan, Italy, and New York City within the last few months. Besides, social distancing, quarantine, contact tracing are capable to stop the COVID-19 pandemic [19]. This information might be useful for those who are having psychological issues in this pandemic situation. Moreover, the physiotherapeutic intervention was found to be effective in the stable stage in several studies which will also create hope. Many European countries such as Portugal have declared physiotherapy service as a fundamental service for COVID patients [20].

**Conclusion**

This Pandemic caused 12102328 confirmed cases with 551040 deaths globally reported to WHO on 10th July 2020 [21]. A significant amount among them had respiratory complications therefore the number is indeed very big. The entire world health system is struggling to face this huge health burden where physiotherapy service might be a

fundamental health service during COVID and post COVID situation. This case described how an expert's advice and expert-guided physiotherapeutic intervention helped to reduce the respiratory complication and helped to make a good recovery within a short period.

**Competing Interest:** Authors declare no conflict of interest.

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