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AWARENESS AND PERCEPTION ON CARDIORESPIRATORY PHYSIOTHERAPY FOR COVID-19 PATIENTS AMONG THE ALUMNI PHYSIOTHERAPISTS FROM KPJ HEALTHCARE UNIVERSITY COLLEGE, NILAI

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ABSTRACT

Introduction: In the respiratory management and physical recovery of Covid-19 cases, physical therapy may be necessary. The spectrum of cardiorespiratory physiotherapy is limited to acute provision without referral to an outpatient physiotherapy clinic for patients with cardiorespiratory problems. In community settings, a limited number of physiotherapists practicing further restricting the scope. The objective of this research is to identify the awareness and perception of cardiorespiratory physiotherapy for Covid-19 patients among the alumni physiotherapists from KPJ Healthcare University College. **Method:** A cross-sectional online survey study among the alumni physiotherapists from KPJ Healthcare University College. 80 male and female alumni physiotherapists from Diploma Cohort 1 to 10 are selected as they would have at least 5 years and above working experience and is considered competent and reliable scientific evidence for this study. Sampling technique used for this research is convenience sampling better known as a non-probability sampling technique. Sample size is determined by using Slovin's Formula. Questionnaire related to research topic is distributed via Google Docs. Descriptive statistics is done using SPSS version 26. **Results:** This study shows majority had good knowledge, awareness and their perceptions from their own perspectives as a physiotherapist as well as an ordinary man. **Conclusion:** Chest physical therapy can help to improve physical health from an acute illness. In conclusion, this study was able to determine the awareness and gauge the perception of cardiorespiratory physiotherapy for Covid-19 patients among physiotherapists.

Key Words Cardiorespiratory; Covid-19; Physiotherapist; Chest physiotherapy; Slovin's Formula

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INTRODUCTION

Coronavirus better known as Covid-19 traces back from Wuhan, China in December 2019. This virus has spread throughout the world. Even though, the Chinese government had adopted a strategy to stop this epidemic, it still exists in the world (Jiménez-Pavón et al., 2020). Now, Covid-19 has become a global pandemic, with statistical report taken from World Health Organization (WHO) stating 66,243,918 confirmed cases, 1,528,984 deaths and 46,723,472 by the 7th. December 2020 all around the world ¹⁻³.

Coronaviruses (CoV) are known to cause serious issues and sometimes is fatal. Some of the pulmonary diseases such as, severe acute respiratory syndrome (SARS) and Middle East Respiratory Syndrome (MERS) (Gohel et al., 2020a). The latest type of coronavirus in 2019 belongs to the β species of coronavirus, preliminary scientific reports revealed that, Covid-19 would be possibly spread via animals to humans but current findings state that human to human transmission is possible via respiratory droplets and close contact. It can be found in human respiratory epithelial cells within 96 hours. It first attacks the lungs and induces the formation of serous, fibrin exudate and hyaline membrane in the alveoli ⁴⁻⁶.

The incubation period of Covid-19 is 2-14 days (Lauer et al., 2020). The initial symptoms would appear as fever, cough, shortness of breath, trouble breathing, pain or pressure in the chest, fatigue, myalgia or arthralgia, confusion, bluish lips or face. Individuals whom are infected with Covid-19 have high possibilities of getting similar influenza symptoms of respiratory tract infection such as pyrexia of 89%, coughing of 68%, severe fatigue of 38%,

increased production of mucus of 34% and shortness of breath (SOB) of 19% (Shamsi et al., 2020).

This research is done since there might be less awareness on the importance of cardiorespiratory physiotherapy for Covid-19 patients among physiotherapists. For patients hospitalised with Covid-19, physical therapy management includes elements of respiratory assistance and active mobilisation. Recommendation for respiratory assistance, described as the proactive approach to minimising respiratory symptoms during the acute phase of a pulmonary disorder ^{7,8}. Yet, because of a lack of clinical objectives in patients with critical illness due to Covid-19, physiotherapist management for respiratory support and active mobilisation is not needed (S. Levey Andrew et al., 2002).

The research gap of this is, there are not many research being done on this topic. But it is understood that, in the treatment of acute and chronic respiratory conditions, chest physical therapy focuses on improving the restoration of physical health following an acute illness ^{9,10}. In the respiratory management and physical recovery of Covid-19 cases, physical therapy may be necessary (Shamsi et al., 2020).

One issue to take note, there are very few and difficulty in identifying physiotherapist who have treated and is treating Covid-19 patients. According to (S. Levey Andrew et al., 2002), the specialisation of cardiorespiratory physiotherapy was the least recorded by participants. According to the study (Silva et al., 2020), Covid- 19 results in poor respiratory compliance and significant improvements in lung function, as well as hypoxia and cardiovascular consequences. These alterations

require the use of physiotherapy as well as the administration of oxygen therapy and ventilatory support (both invasive and non-invasive) for these patients¹¹⁻¹³. On top of that, cardiorespiratory physiotherapy seems to be meant for patients who have difficulty clearing secretions, as well as for hyper-secretive patients with chronic respiratory diseases (Thomas et al., 2020, Simonelli et al., 2020). As a researcher, the purpose is to understand what are the perception and awareness of medical professionals on the importance of cardiorespiratory treatment for Covid-19 patients.

The lack of training and incompetency may explain this. Training applicable to cardiorespiratory physiotherapy is not standardised. In the health care system, the position of the physiotherapist is minimised, with no direct access to the service. The spectrum of cardiorespiratory physiotherapy is limited to acute provision without referral to an outpatient physiotherapy clinic for patients with cardiorespiratory problems¹⁷⁻¹⁹. In community settings, a limited number of physiotherapists practising further restricting the scope.

Justification of Study

Physiotherapist age ranged from 21-40 years old is the noticeable target population giving physiotherapy intervention for Covid-19 patients in hospitals. The aim of the study is to create awareness and gauge the perception of cardiorespiratory physiotherapy for Covid-19 patients among physiotherapists. These techniques provide health officials with useful knowledge when it comes to assessing the effectiveness of current

exposure and prevention efforts. It is possible

Specific Objectives: 1) To analyze the awareness of cardiorespiratory physiotherapy for Covid-19 patients among the alumni physiotherapists from KPJ Healthcare University College. 2) To analyze the perception of cardiorespiratory physiotherapy for Covid-19 patients among the alumni physiotherapists from KPJ Healthcare University College. 3) To identify the effects of cardiorespiratory physiotherapy treatment for Covid-19 patients¹⁴⁻¹⁶.

Significance Of Study: The findings of this study will redound the benefits of cardiorespiratory physiotherapy for Covid-19 patients of all ages. The greater demand for physiotherapy graduates justifies for more effective chest physiotherapy for them Covid-19 patients.

In the respiratory treatment and recovery of patients with Covid-19, physiotherapy plays a crucial role. A cardiorespiratory therapist plays a valuable role in the treatment of confirmed or suspected Covid-19 patients²⁰⁻²². The predominant characteristic of this disorder is dyspnea where inspiratory muscle training and breathing techniques can be helpful for improving dyspnea (Jangra MK, Saxena A. Significance of physiotherapy in "SARS-CoV-2/COVID-19: An Epidemic" Ann Thorac Med 2020;15:179-80).

The result of this study can be included as a treatment protocol in the future and create awareness in healthcare and general population and also it can be included in the academic syllabus for life-long learning purposes

RESULTS

Demographic Data: This section examines the respondents' various demographic features. There are supporting tables and statistics, as well as comparable data since from Wuhan, China, in December 2019 to date and wherever valid information is obtained. The demographic data collected included gender, age, marital status and source of info about Covid-19.

Respondents' gender: The male and female of student alumni of Diploma in Physiotherapy from KPJ Healthcare University College were chosen to participate in this study. These graduates were chosen for this study based on their willingness to volunteer and their availability. The inclusion of both

male and female participants was intended to decrease bias in this study. The pie chart below (see Figure 4.2.1) represent the total numbers of both male 32.8% (20) and female 67.2% (41) participated in this study.

The number of female participants was found to be greater than the number of male participants. This was due to the availability and the number of participants targeted for this study. All participants had answered the exact identical questionnaire distributed in an attempt to minimize any potential gender bias.

Variables	n	(%)
Gender		
Male	20	32.8
Female	41	67.2

Table 1 Distribution of gender among the participants n=61.

Respondents' ages

These group of age was chosen since this study requires alumni from Diploma in Physiotherapy from cohort 1 until 10. The respondents' age were in three ranges

which are 67.2% (41) were 20-29; 32.8% (20) were 30-39. There were no respondents' 40 above years of age (see figure 4.2.1).

Age (years)		
20 – 29	41	67.2
30 – 39	20	32.8

Table 2 Distribution of age (years) among the respondents n=61.

Source of info about Covid-19

Variables	n	(%)
Source of info about Covid-19		
Social Media	36	59.0
TV / Radio	10	16.4
Workplace	15	24.6

Table 3 Distribution of source of info about Covid-19 among the participants n=61.

Above table shows 59% (36) via social media; 16.4% (10) via TV or radio; and 24.6% (15) at workplace.

Descriptive Statistical Analysis

Awareness And Knowledge Items: The awareness and knowledge of physiotherapist about Covid-19 items collected includes seven items. As listed, respondents have treated Covid-19 patients; improvement from the physiotherapy treatment; presence of

breathing exercise; specific treatments given; prognosis after giving breathing exercise; incubation period of Covid-19; and increased risk of Covid-19 for healthcare workers and elderly people of 65 year and above.

Respondents have treated Covid-19 patients

Variables	n	(%)
Respondents have treated Covid-19 patients.		
Yes	15	24.6
No	46	75.4

Table 4 Distribution of whether respondents have treated Covid-19 patients.

Above table shows 24.6% (15) have treated and 75.4% (46) have not treated.

Improvement from the physiotherapy treatment

Represents got improvement from the physiotherapy treatment. Of the respondents, 80.0% (16) shows improvement from physiotherapy treatment but 20.0% (4) stating there is no improvement.

Variables	n	(%)
Improvement from the physiotherapy treatment		
Yes	16	80.0
No	4	20.0

Table 5 Distribution of improvement from the physiotherapy treatment.

Presence of breathing exercise

Variables	n	(%)
Presence of breathing exercise		
Yes	17	89.5
No	2	10.5

Table 6 Distribution of the presence of breathing exercise

Above table shows 89.5% (17) given breathing exercise and 10.5% (2) not given breathing exercise.

Variables	n	(%)
The specific treatments given		
1 treatment	4	20.0
2 treatments	2	10.0
3 treatments	7	35.0
4 treatments	4	20.0
Other treatment(s)	3	15.0

Table 7 Distribution of the specific treatments given.

Specific treatment group shows 20.0% (4) 1 treatment; 10.0% (2) 2 treatments; 35.0% (7) 3 treatments; 20.0% (4) 4 treatments; and 15.0% (3) other treatment(s).

Prognosis after giving breathing exercise to Covid-19 patients

Variables	n	(%)
Prognosis after giving breathing exercise to Covid-19 patients		
Good	11	55.0
Fair	9	45.0

Table 8 Distribution prognosis after giving breathing exercise to Covid-19 patients.

Incubation period of Covid-19

Variables	n	(%)
Incubation period of Covid-19		
3 – 5 days	1	1.6
1 – 7 days	6	9.8
0 – 14 days	46	75.4
6 – 10 days	8	13.1

Table 9 Distribution of incubation period of Covid-19**Higher risk of Covid-19 for healthcare workers and elderly people of 65year above**

Variables	n	(%)
Yes	61	100.0

Table 10 Distribution for higher risk of Covid-19 for healthcare workers and elderly people of 65 year and above.

Higher risk of Covid-19 for healthcare workers and elderly people of 65 year and above.

Perception Items

The perception of physiotherapist about Covid-19 items collected included four items. As listed the four agreeableness, practicing respiratory hygiene can prevent Covid-19; avoid going to work if suspicious symptoms appear; benefits of breathing exercise for Covid-19 patients; and importance of chest physiotherapy for discharged from the hospital Covid-19 patients.

Practicing respiratory hygiene can prevent Covid-19

Variables	n	(%)
Practising respiratory hygiene can prevent Covid-19		
Strongly agree (SA)	46	75.4
Agree (A)	11	18.0
Undecided (U)	4	6.6

Table 11 Distribution of practicing respiratory hygiene can prevent Covid-19

Above table shows the respondents, 75.4% (46) strongly agreed; 18.0% (11) agreed; and yet 6.6% (4) still undecided. No respondents disagreed.

Avoid going to work if suspicious symptoms appear

Variables	n	(%)
Avoid going to work if suspicious symptoms appear		
Strongly agree (SA)	35	57.4
Agree (A)	24	39.3
Undecided (U)	2	3.3

Table 12 Distribution of avoid going to work if suspicious symptoms appear.

Above table shows 57.4% (35) strongly agreed; 39.3% (24) agreed; and yet 3.3% (2) still undecided. No respondents disagreed.

Benefits of breathing exercise for Covid-19 patients

Variables	n	(%)
Benefits of breathing exercise for Covid-19 patients		
Strongly agree (SA)	17	27.9
Agree (A)	34	55.7
Undecided (U)	10	16.4

Table 13 Distribution of benefits of breathing exercise for Covid-19 patients

Above table shows, 27.9% (17) strongly agreed; 55.7% (34) agreed; and yet 16.4% (10) still undecided. No respondents disagreed.

Importance of chest physiotherapy for discharged Covid-19 patients

Variables	n	(%)
Importance of chest physiotherapy for discharged Covid-19 patients		
Strongly agree (SA)	32	52.5
Agree (A)	23	37.7
Undecided (U)	6	9.8

Table 14 Distribution of the importance of chest physiotherapy for discharged from the hospital Covid-19 patients

Above table shows 52.5% (32) strongly agreed; 37.7%, (23) agreed; and yet 9.8% (6) still undecided. No respondents disagreed.

This chapter sets out the findings and discussion, limitation and recommendations for further research. It focuses on reviews, opinions and recommendations of researchers. In this chapter will also set out a brief discussion of the findings through the objective and aim with the effect as the outcome of the study, where the significance of the study is explained. The findings of the study are discussed according to the information from the results obtain.

DISCUSSION

Demographic Data: In this light of the virus's worldwide impact and media attention, this current study was aimed to determine to identify the awareness and perception of cardiorespiratory physiotherapy for Covid-19 patients among the alumni physiotherapists from KPJ Healthcare University College. This current study discovered that, the majority of male and female alumni physiotherapists from KPJ Healthcare University College came to know about Covid-19 via social media about 59%, 36 out of 61 of the respondents^{23,24}.

Another overview led in Pakistan detailed that social media (87.68%) stayed the essential source of data among medical care experts (Saqlain et al., 2020a). Study by (Gohel et al., 2020b) signifies that the majority of students obtained the knowledge of Covid-19 by 65.17% also via social media. According to this online survey study, it is found that only 24.6%, 15 out of 61 from the alumni respondents have treated Covid-19 patients. Possibilities leading to this percentage is maybe due to most Covid-19 cases are often sent to the government hospitals or the specific Covid-19 isolation

centres and many of them are in scattered location or centres where they are told not to accept Covid-19 patients.

Awareness And Knowledge of Physiotherapist About Covid-19: Moving on to the second part of the discussion which is based on the awareness and knowledge of physiotherapist about Covid-19. The instructions given in the circulated questionnaire does not require all the participants to answer on the improvement from the physiotherapy treatment, 80.0%, 16 out of 20 have indicated, meaning extra by 5 respondents whom have answered on the improvement as per their awareness and knowledge²⁵⁻²⁷.

Besides that, the survey alumni respondents by 89.5%, 17 out of 19 emphasizes on the importance of breathing exercise to be given to the Covid-19 patients. (H. M. Zhao et al., 2020) recommends breathing exercise to be included as one of the respiratory rehabilitation intervention. As for, mild symptoms of Covid-19 diaphragmatic breathing technique is found to be effective. Adding on to that, breathing exercise comprises posture management, adjustment of breathing rhythm, thoracic expansion training, mobilization of respiratory muscle groups, and other activities. Looking back at post Covid-19 patients, an expert review by (Sun et al., 2020) investigated there will be on the off chance that a patient has respiratory-related side effects, the breathing example preparing and sputum preparing ought to be designated related to the assessment results. The current finding from the awareness and knowledge item, 55.0%, 11 respondents has come to a conclusion of good prognosis is noticeable after breathing exercise whereas, 45.0%, 9 respondents only justifies it.

Clearly, no respondents have said likewise regarding the breathing exercise treatment²⁸.

Initially given treatments are breathing exercise, chest percussion, ambulation, chest mobility and others. According to the descriptive statistical analysis, the treatments are classified into five categories. As per listed is 1 to 4 treatments and others. Results are 1 treatment (20.0%); 2 treatments (10.0%); 3 treatments (35.0%); 4 treatments (20.0%); and other treatment (15.0%). As for the others with 3 respondents, first three choices and one add on (breathing exercise; ambulation; chest mobility; 6 minute walking test). Secondly, one choice and one add on (chest percussion; suction). Thirdly, four choices with one add on (breathing exercise; chest percussion; ambulation; chest mobility; spirometer or Voldyne). A written management strategy added that ACAPELLA could be beneficial for Covid-19 patients on mechanical ventilation where it can assist in increasing the dynamic lung compliance immediately. In order to reduce complications in Covid-19 ICU patients, they advised to perform active movement of the upper and lower limb accordingly.

It is found that majority by 75.4%, 46 out of 61 respondents have the awareness of the incubation period of Covid-19 is 0-14 days. Interestingly, there are several studies on this item. Other cross-sectional surveys in Pakistan (Saqlain et al., 2020b), China (Zhong et al., 2020), and Iran (Taghrir et al., 2020) yielded 96.38%, 66.40%, and 85.4% correct answers concerning the incubation time, respectively. Relatively, 96.19% of healthcare workers have specified the viral incubation period is 1-14 days. This period is critical to be quarantines for 14 days until symptoms are shown or upon

receiving the lab reports (Qadah, 2020). A research done in Vietnam (Bui et al., 2020) supports the existing guidelines of the U.S. Centers for Disease Control and Prevention. It is found that such as, extreme cases the quarantine period should at least be more than three weeks. According to the data analysis by (Lauer et al., 2020) estimation median of the incubation period is 5.1 days and symptoms may persist in 12 days of infection. Yet, concludes 14 days is best as it is supported with clear evidences^{29,30}.

Utmost of the respondents of this survey have the understanding about the risk level of Covid-19 for healthcare workers and those of 65 years and above. Again several previous studies are made, geriatrics and those with medical history, according to the majority are more susceptible to Covid-19 (Gohel et al., 2020a). A cross-sectional online survey among the general population of the United States (US) and the United Kingdom (UK) and Egyptians revealed that geriatrics have a higher morbidity level attributable to Covid-19 infection, respectively (Abdelhafiz et al., 2020; Rubin & Crowe, 2020).

Perception Of Physiotherapist About Covid-19: Final part in this chapter is discussion, the perception of physiotherapist about Covid-19. Likert scale is used here for data descriptive statistical analysis. This current study, majority have strongly agreed; agreed; or stay undecided, no respondents disagreed according to their individual perception.

Starting with the importance practicing respiratory hygiene can prevent the spread of Covid-19, 75.4% strongly agreed; 18.0% agreed; 6.6% still undecided. According to the same previous survey conducted in India,

over 73.15% perceive that wearing a surgical face mask can protect them from becoming infected with Covid-19. "Consistently wearing a face mask is highly effective in protecting you from getting infected with the new coronavirus", this exact statement was given by community members of East Asian ethnicity in a previous discussed study carried out in The US and UK. Followed by, absent to work if suspicious symptoms appear, 57.4% strongly agreed; 39.3% agreed; 3.3% still undecided. In contrast to that, (Cossarizza et al., 2020) had figures out that people who are asymptomatic or mildly sick yet infectious still continues working which results in infecting others^{31,32}.

The statistical analysis on benefits of breathing exercise for Covid-19 patients in this study is, 27.9% strongly agreed; 55.7% agreed; 16.4% still undecided. In a letter (Yu et al., 2020) reported despite having only dry cough, early use of airway clearance techniques is recommended in order to promote lung ventilation for the sputum to be mobile. Similarly, the importance of chest physiotherapy for discharged Covid-19 patients is determined in this study. Of the respondents, 52.5% strongly agreed; 37.7% agreed; 9.8% still undecided.

As Covid-19 is transcendentally a respiratory infection with extreme cases needing ventilator support. Besides that, in the survivors, a range of pulmonary symptoms ranging from dyspnea to fibrotic lung damage has been observed to continue for up to 6 months post-infection. Respiratory therapy, is recommended (Scheiber et al., 2021). Also, (Raveendran & Misra, 2021) emphasizes the post-Covid patient to be on a customised and supervised exercise program that includes

aerobic and resistance activities and chest physiotherapy.

Ethical clearance: Ethical clearance was obtained from the ethical Institutional Review Board of School of Health Sciences, KPJ Healthcare University College, Nilai with reference No-KPJUC/RMC/SOHS/ EC/2021/335 approval letter dated 01/04/2021.

Conflicts of Interest: There is no conflict of interest to conduct and publish this study.

Fund for the study: This is self-funded study, no fund received from any organization.

CONCLUSION

Covid-19 is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV- 2) which leads to viral pneumonia and acute respiratory distress syndrome (ARDS). Recently, it is found that this virus is not only transmitted via respiratory system droplets and close contact but is now air-borne too. Chest physical therapy can help to improve physical health from an acute illness. In conclusion, this study was able to determine the awareness and gauge the perception of cardiorespiratory physiotherapy for Covid-19 patients among physiotherapists. On top of that, cardiorespiratory physiotherapy is essential throughout a patient's stay in the hospital.

However, the hospital physiotherapy team must be well-oriented and reduce infection risk and provide the best patient care. As a result, majority had good knowledge, awareness and their perceptions from their own perspectives as an ordinary man. This research can be a guiding light during this pandemic situation for all the budding physiotherapists.

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