

Impact of Pulmonary Care Educational Program on Nurses Perception related to COVID 19 Patients in Al – Hillah teaching hospitals

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Abstract

Background: Intensive care unit nursing is an occupation that involves specialized knowledge and abilities applicable to a range working in the intensive care units which may affected by nurses' perception. Objective: To assess the impact of pulmonary care educational program on nurse's perception related to COVID 19 patients. Methodology: A quasi-experimental design selected as suitable method to evaluate the impact of pulmonary care educational program on nurses' perception related to COVID 19 patients during the period of 3ed January 2022 to 26th February-2022. The study conducted at the critical care units which distributed at Al-Hillah Teaching Hospitals. Non-probability (purposive) sample methods selected, the original sample were divided to two groups, the first one is control group consist of (30) nurses, while the remaining number (32) assigned as interventional group member. Results: Most of participants in both groups 15 (48.4%), 15 (50%) were between (24-26) years age group, 19 (61.3%), 15 (50%) were male, 16 (51.6%) were diploma degree in interventional group, while 20 (66.7%) were bachelor degree in the control group, simple significant change is presented in the following two Post-test (3.65 ± 0.423), (3.73 ± 0.564) with agree assessment for interventional group about nurse's perception from coronavirus disease 19. Conclusion: Significant changing related to perception in interventional group between pretest, posttest 1 and posttest 2 with agree assessment. While there is no change in mean of score among control group.

Keywords: Impact, Educational Program, Perception, COVID 19

1. Introduction

Perception is modified by the recipient's, attention expectancy, knowledge, and remembering, as well as the passively receiving of these signals. Sensory input is a technique for converting low-level data into higher-level data (e.g., extracts shapes for object recognition). The following steps link a person's expectations and conceptions, as well as restorative and selective processes (such as attention) that impact perception (Bernstein, D., 2018).

Perception has three components, according to Alan Saks and Gary Johns: (Sarah S.M., 2013).

- The Perceiver: is an individual whose attention is drawn to the stimuli and who so starts to perceive it. Many elements may impact a perceiver's perceptions, but the three most important are experiences, emotion state, and motivation status. All of these characteristics, have a significant impact on how an individual view a condition. The perceiver may use a perception define in which they only see what they want to see.
- The Target: the subject of perception; the object or person that is perceived. The quantity of data acquired by the perceiver's sensory organs influences their interpretation and comprehension of the object.

- The Situation: timing, stimulus intensity, and surrounding elements that influence the perceptual process. These elements may cause a single stimulus to be interpreted by the brain as only a stimulus and not a percept.

The function of nurses during the covid-19 epidemic is classified into five dimensions. Health education, preventive, and assistance for individuals, particularly high populations, comprise the first domain. Nosocomial infection identification and prevention is the second domain. A third domain is the use of planning and safety precautions in nursing care. Protection of individuals with immunological weaknesses or underlining disorders, including as chronic obstructive pulmonary disease and cancer, is the fourth domain. The fifth domain is caring for patients. Nurses should have enough disease awareness to fulfill their jobs and obligations (Semerci et al., 2020).

To satisfy the requirements, comfort, and objectives established for the patient experiencing mechanical ventilation or respiratory failure, the nursing care must adhere to evidence-based criteria for safe and effective treatment. (Arrar and Mohammed, 2020).

2. Objectives

- To assess the impact of pulmonary care educational program on nurse's perception related to COVID 19 patients in Al – Hillah teaching hospitals

- To find out the association between critical care nurses' perception with certain related variables such as (age, gender, educational qualification)

3. Methodology

A quasi-experimental design selected as suitable method to evaluate the impact of pulmonary care educational program on nurse's perception related to COVID 19 patients in Al – Hillah teaching hospitals. The study conducted at the critical care units which distributed at Al-Hillah Teaching Hospitals (Al-Shefaa Center at Marjan Teaching Hospital, Imam Al-Sadiq Teaching Hospital and Al-Hillah Teaching Hospital). Non-probability (purposive) sample selected to collect the data which is consider the suitable methods for this type of design. The sample consist of (62) nurses out of (214) nurses were selected, the original sample were divided to two groups, the first one is control group consist of (30) nurses, while the remaining number (32) assigned as interventional group member.

In order to evaluate the impact of pulmonary care educational program on nurses' perception related to COVID 19 Patients in Al-Hillah City comprehensive review of related literature was performed to proper questionnaire form as a tool to achieve the objectives of study. Two version of questionnaire prepared in Arabic and English language to take it easy to participate. The questionnaire divided as the following:

Part One: Demographical Data sheet, it consists from (4) items (Gender, Age, Educational states and Marital status). Part Two: Employment information, it consists from (4) items. Part three: This part of the questionnaire includes (2) domains, the first domain talking about nurse's perception about safety from coronavirus disease 19 which consist of (16), while second domain focused on communication and

relationship between team members which consist of (5) items adopted from (González-Gil, M. T., et al., 2021). Validity obtained by 12 experts, while reliability obtained by using statistical interclass correlation coefficient (0.874), which is statistically accepted, statistical analysis of the data performed by using statistics package program for social sciences (SPSS version 22).

Ethical Consideration

Professional ethics for nurses will state the ideal path in which they should behave in all relationships including patients, patient's family, co-workers. The ethical rules followed by the researcher when carrying out nursing researches directed to secure individuals right and welfare. Formal agreement obtained for all nurses who participate in the study after a brief introduction of the study objectives and importance.

Data Collection

Data were collected through self-report method during the period of 3rd January 2022 to 26th February-2022; the critical care nurses who participate in the study need approximately (25 - 30) minutes to complete all items of the questionnaire. The participants inform that they are free to withdraw from the recruitment even they had given their consent previously to participate in the study. All the participants of the study group (62) are exposed to pre-test, to determine their knowledge about pulmonary care of coronavirus disease 19. All the participants of the interventional group (32) are exposed to the educational program, which was implemented at Al-Hillah teaching Hospital \ critical care unit. The educational program was constructed to provide the nurses with knowledge for provided pulmonary care for coronavirus disease 19, which presented as four sessions each session takes about 45 min.

4. Results

Demographic characteristics	Rating and intervals	Interventional group		Control group	
		F	%	F	%
Age / Years	Less than 24	10	32.3	8	26.7
	24-26	15	48.4	15	50.0
	More than 26	6	19.4	7	23.3
	Total	31	100.0	30	100.0
Gender	Male	19	61.3	15	50
	Female	12	38.7	15	50
	Total	31	100.0	30	100
Education Status	Diploma in Nursing	16	51.6	10	33.3
	Bachelor of Nursing	14	45.2	20	66.7
	Postgraduate	1	3.2	0	0
	Total	31	100.0	30	100.0
Marital Status	Single	18	58.1	10	33.3
	Married	13	41.9	20	66.7
	Divorced	0	0	0	0
	Separated	0	0	0	0
	Widow	0	0	0	0
	Total	31	100	30	100

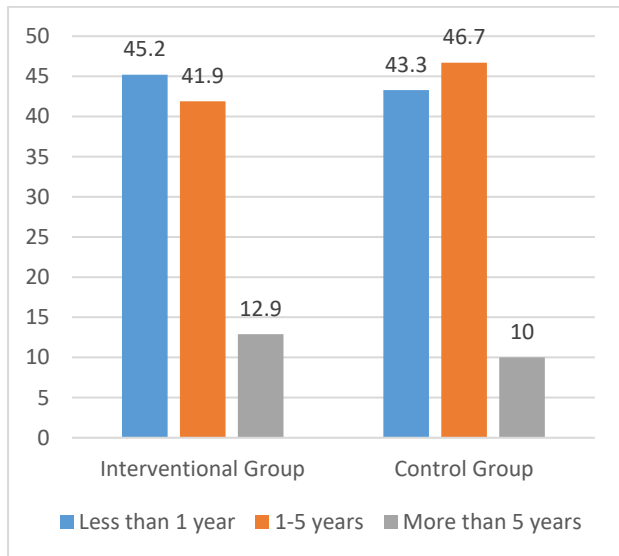


Figure 1: Distribution of study samples (both groups) related to years of services in nursing

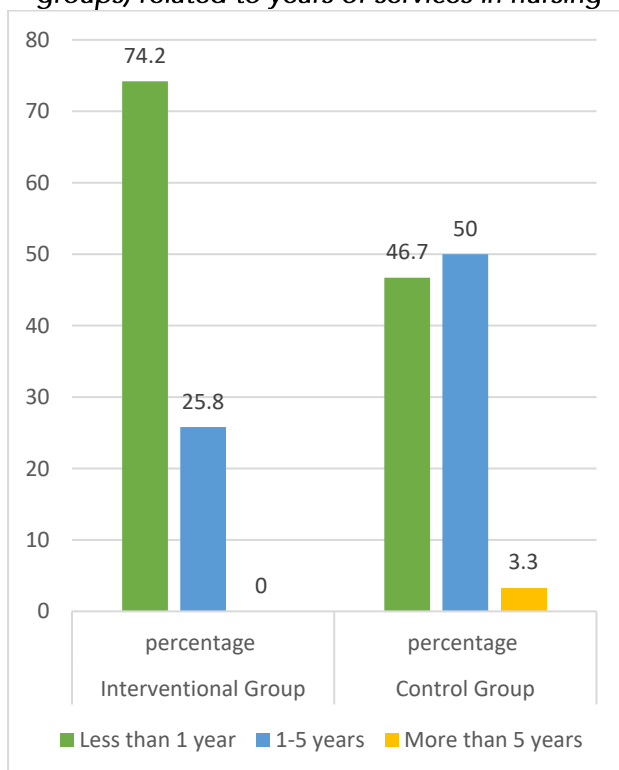


Figure 2: Distribution of study samples (both groups) related to years of services in the intensive care unit

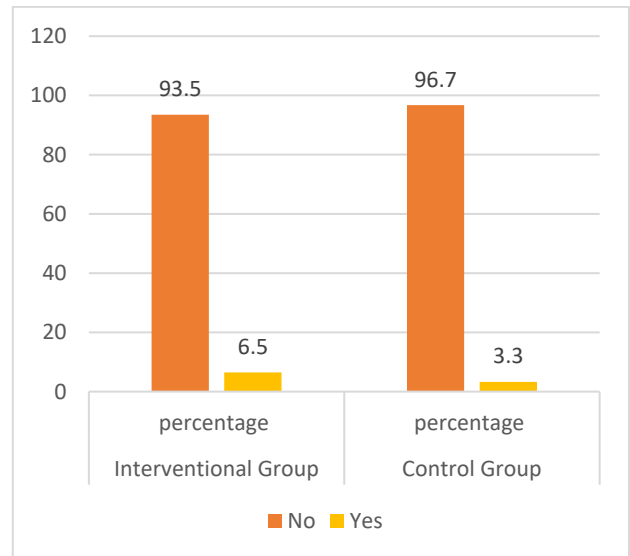


Figure 3: Distribution of study samples (both groups) related to participated in courses on pulmonary care for patients with respiratory complication in case of COVID 19

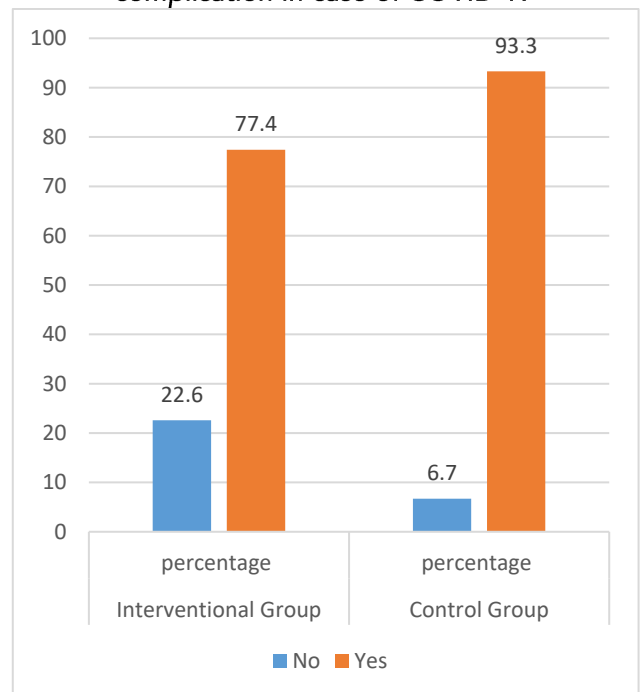


Figure 3: Distribution of study samples (both groups) related to self-education about the field of specialization

Table 2: Distribution of the study sample (both groups) related to learning resources in the field of COVID 19

N	Items	Interventional group		Control group	
		Frequency	Percent	Frequency	Percent
1.	Social Media	4	16.7	8	28.6
2.	Digital science websites	1	4.2	1	3.6
3.	Hospital library	0	0	0	0
4.	Nurse colleagues	4	16.7	4	14.3
5.	Social Media and Digital science websites	1	4.2	0	0
6.	Social Media and Nurse colleagues	7	29.2	8	28.6
7.	Digital science websites and Nurse colleagues	4	16.7	2	7.1
8.	Digital science websites and Hospital library	0	0	1	3.6
9.	Social Media, Digital science websites and Nurse colleagues	0	0	1	3.6
10.	Social Media, Digital science websites and Nurse colleagues	3	12.5	0	0
11.	Social Media, Hospital library and Nurse colleagues	0	0	2	7.1
12.	Digital science websites, Hospital library and Nurse colleagues	0	0	1	3.6
	Total	24	100	28	100

Table 3: Assessment of the responses of the study sample (control and interventional group) related to their perception about COVID 19 safety intervention

N	Items	Interventional group			Control group		
		Pretest	Posttest 1	Posttest 2	Pretest	Posttest 1	Posttest 2
		M ± Std	M ± Std	M ± Std	M ± Std	M ± Std	M ± Std
1.	I am equipped to guarantee my safety while caring for COVID-19-infected patients.	3.94 1.289	3.77 1.230	4.33 1.061	3.81 1.327	3.47 1.383	3.60 1.354
2.	To prevent the transmission of the virus in the healthcare facility, asepsis procedures are used.	4.23 1.175	4.06 1.124	4.37 .890	4.06 .892	3.90 1.185	3.60 1.133
3.	I fear making errors in the care of COVID-19-infected individuals as a result of the care pressure.	3.77 1.146	3.84 .969	4.00 .983	3.94 .964	3.97 .890	3.90 .885
4.	I lack adequate expertise about the management of COVID-19-infected individuals.	3.06 1.093	3.35 1.112	3.33 1.061	3.48 1.122	3.13 1.106	3.13 1.042
5.	The facility makes sure that all of its employees are trained in the proper processes and how to wear safety equipment.	3.48 1.387	3.68 1.275	3.50 1.225	3.52 1.338	3.40 1.354	3.30 1.343
6.	The strategies for treating individuals infected with COVID-19 have been well mapped out.	3.19 1.046	3.26 .965	3.13 .937	3.26 1.032	3.37 1.033	3.10 1.062
7.	Healthcare staff are expected to execute duties for which they are unprepared.	3.10 1.193	3.29 1.071	3.87 1.196	3.42 .886	2.93 1.311	3.67 1.124
8.	While performing my healthcare responsibilities, I consider the probability of contracting COVID-19.	3.97 1.224	3.61 1.086	4.07 1.143	3.68 1.045	4.03 .999	4.00 1.017
9.	I consider the likelihood that I am an asymptomatic carrier.	4.10 .944	3.74 1.064	4.07 1.112	3.94 1.031	3.93 1.143	4.13 .860
10.	I'm terrified of infecting the individuals with whom I reside or come into touch.	4.23 .956	4.32 .909	4.40 .968	4.26 .999	4.23 1.073	4.37 .928
11.	I am afraid of being infected with covid 19 virus.	3.74 1.290	3.90 .790	3.80 1.095	3.87 .718	3.70 1.264	3.60 1.248
12.	I am not well accustomed to use the PPE.	3.03 1.378	3.03 1.426	3.00 1.531	3.26 1.154	3.13 1.408	2.93 1.143
13.	The PPE is not enough to protect from infection.	3.84 1.186	3.48 1.262	3.97 .964	3.58 1.057	4.00 .983	4.00 1.114
14.	The circumstances (crowdedness) in the work place are suitable for transmitting infection.	4.06 .929	4.45 .624	4.00 .983	4.13 .846	3.90 1.094	4.03 .850
15.	The public stigmatizes those who get infection.	2.94 1.365	2.94 1.315	2.33 1.398	2.48 1.288	2.13 1.383	2.2 1.349
16.	The organization is not committed to the preventive measures.	3.45 1.287	3.58 1.119	3.50 .900	3.19 1.138	3.17 1.053	3.47 .937
General mean and SD		3.63 0.453	3.65 0.423	3.73 0.564	3.62 0.444	3.53 0.543	3.56 0.543
Assessment		Agree	Agree	Agree	Agree	Agree	Agree
No.		31	31	31	30	30	30

Cut of point = 16, strongly disagree = (21-37), disagree = (38-54), uncertain = (55-71), agree = (72-88), strongly agree = (89-105)

Table 4: Assessment of the responses of interventional and control group related to their perception about communication and relationship between team members

N	Items	Interventional group			Control group		
		Pretest	Posttest 1	Posttest 2	Pretest	Posttest 1	Posttest 2
		M ± Std	M ± Std	M ± Std	M ± Std	M ± Std	M ± Std
	Between doctors and nurses, there is a lot of collaboration.	3.81 1.046	3.90 .978	3.68 1.077	3.73 1.202	3.73 1.285	3.63 1.066
	Physicians and nurses have excellent working connections.	3.68 1.137	3.90 .908	3.42 .958	3.80 .961	3.60 1.354	3.50 1.106
	Senior and middle management are receptive to improvement suggestions from the health professionals.	3.13 1.284	3.29 1.071	3.23 1.117	3.03 1.351	3.00 1.339	3.50 1.106
	Managers of the middle and above ranks enquire about the demands of the health professionals.	3.19 1.327	3.16 1.098	3.00 1.065	2.97 1.299	2.83 1.234	2.90 1.322
	Managers of the middle and upper levels strive to address the demands of the health professionals.	3.13 1.522	3.39 1.054	3.32 1.107	3.23 1.251	2.83 1.234	2.70 1.236
General mean and SD		3.39 0.328	3.53 0.350	3.33 0.249	3.35 0.390	3.20 0.433	3.09 0.441
Assessment		Unsure	Agree	Unsure	Unsure	Unsure	Unsure
No.		31	31	31	30	30	30

Cut of point = 16, strongly disagree = (21-37), disagree = (38-54), uncertain = (55-71), agree = (72-88), strongly agree = (89-105)

Table 5: Association between demographic characteristics and nursing perception for study group

Biographical characters	χ^2	degree of freedom	P-value	Assess
Gender	21.333	21	.439	N. S
Age	47.274	42	.266	N. S
Educational states	20.250	21	.505	N. S
Marital status	22.500	21	.371	N. S

5. Discussion

Table (1) which presented the results related to the demographical characteristic of the study sample shows that most of study sample (both groups) 15

(48.4%), 15 (50%) were (24-26) years old. This result supported by study carried out by (Ahmed et al 2020) titled as "knowledge, awareness and practice of health care professionals amid SARS-CoV-2, corona virus disease outbreak", the finding revealed

that most of the participants 300 (37%) out of $n=810$ were (22-25) years old. Most of the nurses in the critical care units were young related to the responsibilities complex of the work and fast turn off. In relation to gender the results shows that most of the interventional group were male 19 (61.3%), while the control group were equal in numbers between male and female 15 (50%). The study published in, 2021 to study "Efficacy of COVID-19 prevention educational program on Nurses' knowledge and practices at hemodialysis unit" in Egypt by Elpasiony et al founded that most of participants were male 16 (53.3%). The critical care unit receives complicated cases the work load is so heavy for this reason most of the nurses in this area were male.

Saddon and Hassan, 2017, applied an educational program in Al-Amara City at Al-Sader teaching hospital to enhancing the nursing care of patients with chronic obstructive pulmonary illness, in this study the researcher founded that most of the participant 17 (56.7%), 15 (50.0%) were with diploma in nursing, this results parallel with our finding which shows that the high percentage of the interventional group 16 (51.6%) were diploma holders, while high percentage of the control group 20 (66.7%) were bachler holders.

The marital status of nurses working in intensive care unit who participate in the study were 18 (58.1%) were single for interventional group, while for control group 20 (66.7%) were married.

Related to the years of experience figure (1) shows that 14 (45%) were less than one year in the interventional group and 14 (46.7%) for control group were between (1-5) years of experience. This result agrees with study applied by Giao et al, 2020 which carried out to assess health care worker knowledge and attitude toward coronavirus disease 19, the results indicate that (70%) of the participant were nurses, (62.9%) were with less than 5 years' experience.

Related to years of experience in the intensive care unit the results shows that 23 (74.2%) were less than 1 year in the interventional group, while the control group recorded 15 (50 %) within 1-5 years of experience in critical care unit. This results not supported by study applied in kingdom of Saudi Arabia among critical care nurses titled as "effect of structured teaching program on knowledge regarding prevention of ventilator associated pneumonia" which founding that most of participants (39%) their experience in critical care unite between (5 – 10) years (Chithra and Janula 2017).

Figure (3) shows that most of the participants in study sample 29 (93.5%) and 29 (96.7%) didn't received any educational courses related to pulmonary care for patients with respiratory complication in case of coronavirus disease 19. This result supported by study applied in turkey to assess nurses' knowledge about coronavirus disease 19 which founded that most of study sample 96 (51.4%) were not receiving an education about coronavirus disease 19.

This conclusion might be explained by the fact that nurses in the study settings did not get any in-service education or training. Inadequate nurse training may be the result of organizational reasons such as a lack of training resources and a nursing staff shortage, which prevents nurses from attending training programs outside of the hospital. On the other hand, most of the study sample (both groups) 24 (77.4%), 28 (93.3%) were depending on self-education related to interested study phenomena. The nurses who work in the critical care unit needs to improve their knowledge to maintain the quality of care which provided of the patients and their families.

According to learning resources which is mostly used by nurses who participated in the study (both groups) table (2) presented that 7 (29.2%) and 8 (28.6 %) of the participants used the social media as a learning resources plus shearing information with their colleagues to improve their knowledge and find the correct answers for their questions. This result compatible with results finding by Elhadi et al in 2020, their finding indicates that most of the participants (75.7%) were obtain their knowledge from different resources from social media platform. Table (3) presents the statistical analysis of nurse's perception their working in intensive care unit about safety from coronavirus disease 19. This table shows the general mean and SD for study group (3.63 ± 0.453) in their pre-test with agree assessment, while simple significant change is presented in the following two Post-test (3.65 ± 0.423), (3.73 ± 0.564) with agree assessment. This results not agree with study result carried out from Madrid in 2021 to find out the nurse's perception regarding COVID 19 care delivery in critical care unit, which reported that lack of confidence in their ability to avoid being infected with COVID-19 and becoming asymptomatic transmitters, creating a danger of spreading the virus to their workplaces and families. Lack of safety was mentioned as a result of a lack of personal protective equipment (PPE), a lack of awareness of this new coronavirus, and a lack of well-defined procedures for handling patients diagnosed with SARS-CoV-2 (González-Gil et al., 2021).

Table (4) presents the statistical analysis of nurse's perception their working in intensive care unit about communication and relationship between team members. This table shows the general mean and SD for study group (3.39 ± 0.328) in their pre-test and post-test 2 (3.33 ± 0.249) with unsure assessment, while simple significant change is presented in post-test 1 (3.53 ± 0.423) with unsure agree assessment. This results not in the same line with results applied by González-Gil et al (2021), which mentioned that lack of communication and relationship between team members in critical area through pandemic might be connected to their feelings of moral distress as a result of making non-consensual decisions.

The table (5) shows no significant association between nursing perception and demographical data at p-value more than (0.05). these results agree

with study applied in Spain to identify nursing perception who there working in critical care unite towered coronaviruses disease 19 which finding that no significant association between nursing perception and their demographical characteristic (González-Gil 2021).

6. Conclusions

- Significant changing related to perception in interventional group between pretest, posttest 1 and posttest 2 with agree assessment. while there is no change in mean of score among control group.
- No significant association between nursing perception and demographical data.

7. Recommendations

- Developing a systematic periodical evaluation for nurses to determining a strategy of upgrade their knowledge to enhancing their output.
- Reapplication on based study is recommended based on a wider probability sample collected from several geographic locations is necessary to raise an efficiency of nurses regarding pulmonary care of coronavirus disease.

References

Ahmed, N., Shakoor, M., Vohra, F., Abduljabbar, T., Mariam, Q., & Rehman, M. A. (2020). Knowledge, awareness and practice of health care professionals amid SARS-CoV-2, corona virus disease outbreak. *Pakistan Journal of Medical Sciences*, 36(COVID19-S4), S49.

Bernstein, D. (2018). *Essentials of psychology*. Cengage learning.

Chithra R. A., & Janula R. (2017). Effect of Structured Teaching Programme on Knowledge Regarding Prevention of Ventilator Associated Pneumonia among Critical Care Nurses. *International Journal of Health Sciences & Research* (www.ijhsr.org) Vol.7; Issue: 7.

Elhadi, M., Msherghi, A., Alkeelani, M., Zorgani, A., Zaid, A., Alsuyihili, A., ... & Amshai, A. (2020). Assessment of healthcare workers' levels of preparedness and awareness regarding COVID-19 infection in low-resource settings. *The American journal of tropical medicine and hygiene*, 103(2), 828.

Elpasiony M., N., Fathallah Mostafa, M., & Fathy Gabr, W. (2021). Efficacy of COVID-19 Prevention Educational Program on Nurses' knowledge and Practices at Hemodialysis Unit. *Egyptian Journal of Health Care*, 12(2), 1333-1347.

Giao, H., Thi, N., Han, N., Khanh, T. V., Ngan, V. K., & Tam, V. (2020). Knowledge and attitude toward COVID-19 among healthcare workers at Knowledge and attitude toward COVID-19 among healthcare workers at District 2 Hospital, Ho Chi Minh City. *Asian Pac J Trop Med*, 13(6), 260-265.

González-Gil, M. T., González-Blázquez, C., Parro-Moreno, A. I., Pedraz-Marcos, A., Palmar-Santos, A., Otero-García, L., ... & Oter-Quintana, C. (2021). Nurses' perceptions and demands regarding COVID-19 care delivery in critical care units and hospital emergency services. *Intensive and Critical Care Nursing*, 62, 102966.

Saddon, M. L., & Hassan, H. S. (2017). Effectiveness of an Educational Program on Nurses' Knowledge toward Nursing Management of Chronic Obstructive Pulmonary Disease (COPD) Patients at Al-Sader Teaching Hospital in Al-Amara City.

Sarah S.M., 2013. "Perception." Explorable. Retrieved 8 March 2020.

Semerci, R., Kudubes, A. A., & Eşref, F. Ç. (2021). Assessment of Turkish oncology nurses' knowledge regarding COVID-19 during the current outbreak in Turkey. *Supportive Care in Cancer*, 29(4), 1999-2006.