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Nurses' perception of using Dexamethasone (Decadron) For COVID-19 patients: Based on PCS Model

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Abstract:

Objectives: To identify nurses' perception of using Dexamethasone for COVID-19 patients and how the medical, hospital, and community aspects interfere the use of this medication.

Methodology: It is a cross-sectional study that conducted among nurses in Duhok City/ Kurdistan region/Iraq. The questionnaire was developed by the authors for the purpose of this study, and it was composed of two main parts. Part one is related to demographics and part two is divided to three subscales which asking for the medical, hospital, and community aspects. The data analysis was conducted by using SPSS (Version25). Descriptive analysis was conducted using frequency, percentage, mean, and standard deviation. To identify the relationship between the aspects, Chi-square test was conducted.

Results: The study revealed that the nurses know the importance and effectiveness of using dexamethasone for COVID-19 patients and its role in decreasing the need for mechanical ventilation and oxygen administration. The community has an impact on nurses' work and intervention regarding the use of dexamethasone (Decadron) for COVID-19 patients.

Conclusion: The study highlighted essential points regarding the use of dexamethasone (Decadron) for COVID-19 patients. The health care providers included nurses need to ensure that dexamethasone (Decadron) is one of the effective medications for COVID-19 patients despite the impact of community on their implications.

Recommendations: the authors recommended more study to be conducted to identify COVID-19 patients' knowledge and perception regarding the use of Dexamethasone and other medications that are used for COVID-19. Also, increasing community orientation and knowledge regarding this disease by television programs, seminars, and group works.

Keywords: Dexamethasone (Decadron), Community, COVID-19, COVID-19 treatments, Nurses' perception.

INTRODUCTION

The coronavirus disease (COVID-19) is one of the biggest problems that affected the world in the 21th century (Kino etal., 2021; Prajapat et al., 2020). It is a highly contagious virus which spread rapidly and caused a worldwide pandemic (Kino et al., 2021). Many of COVID-19 survivors suffer from sequential respiratory complications such as chronic pneumonia, shortness of breath, and respiratory failure. Also, the obstruction of a blood vessel by a blood clot might enter to circulation which affects the patient's heart and other vital body organs (Majmundar et al., 2020). Some Covid patients require hospital care services because the urgent need for oxygenation or prolonged ventilation support

(Group, 2020). There is no specific antiviral treatment for COVID and most of the treatment protocols focused on symptom management and supportive therapy (Lin et al., 2014; Shimamoto et al., 2015).

Dexamethasone is a glucocorticoid which is mostly used to decrease the inflammatory responses (Edinoff et al., 2021). Corticosteroids have an outstanding inhibitory effect on inflammatory factors and are typically used as an alternative management for viral pneumonia (Munir et al., 2020). Although some clinician and trails found improvement in health condition of COVID-19 patients after taking dexamethasone, but others were not sure of the drug's inevitable efficacy and control of the consequences of viral infections (Chappel et al., 2020). It is challenging to develop a drug for treating COVID-19 and vaccination is another important way against corona virus, it provides hope to reduce the infection (Kino et al., 2021; Prajapat et al., 2020).

The urgency of identifying significant data regarding the efficacy of Dexamethasone (Decadron) to guide clinical management for patients with COVID-19 results in conducting a lot of studies for this purpose (Sterne, 2020). Dexamethasone was identified as the first effective medicine for severe COVID-19 patients (Kino et al., 2021).

The death rate was decreased in patients who received dexamethasone than other patient group who received invasive mechanical ventilation and/or those who received oxygen alone (Group, 2020; Lammers, 2020; Lester, 2020; Sterne et al., 2020). The health care providers particularly nurses have an effective and important role in administering various medications and preventive methods for patients in general to advance their curative levels. Nursing care for patient with COVID-19 demands varieties of knowledge, skill, training, and expertise. Thus, nurses need ongoing support and training to improve their perception of utilize and effectiveness in management of COVID-19 patients as well as to deal with psychological problems and maintain patients' safety (Rathnayake et al., 2021).

The use of dexamethasone was associated with a reduction of mortality, shorter patients' hospitalization, and lower risk of invasive mechanical ventilation need (Group, 2020; Van Paassen et al., 2020). Dexamethasone is one of the medication that presented in the guideline of the World Health Organization and it is available worldwide with low cost (Group, 2020).

The protocol of COVID-19 management is included the use of Dexamethasone (Decadron) at the hospitals in our city. There are arguments regarding the use of Dexamethasone for COVID-19 patients. Therefore, this study was aimed to identify how nurses perceive the using dexamethasone (Decadron) for COVID-19 patients. This insight is important in providing a foundation for the health care system and nurses to identify factors influencing the use of dexamethasone (Decadron) for COVID-19 patients.

Aims of the Study

To identify nurses' perception of using Dexamethasone for COVID-19 patients and how the medical, hospital, and community aspects interfere the use of this medication.

METHODOLOGY

It is a cross-sectional study design was conducted among nurses' working at Duhok City teaching hospitals. After a scientific approval was obtained from the scientific committee at the college of nursing/University of Duhok, nurses were invited to participate in the study. A convenience sample of 149 nurses were participated in the study. Eligible participants were nurses from both gender (males and females), who are working at variety of units such as medical wards, surgical wards, critical care units, and COVID-19 units. Also, nurses have different educational background and have more than one

year of experience. The data collection started from August 2021 to the end of October 2021.

In this study, the investigators wanted to identify the nurses' perception of using Dexamethasone and the link between medical, hospital, and community aspects regarding using dexamethasone (Decadron) for COVID-19 patients. This will be done based on PCS model. The model considers anti-discriminatory activities and providing a framework for describing the link between three aspects: personal, cultural, and structural (Thompson, 2017). The questionnaire was developed by the authors of the study through intensive review of literature and their scientific experiences. The nurses who agreed to participate in the study were interviewed face-to-face and the informed consent was obtained verbally from all participants before inclusion into the study and they were informed about the confidentiality of their responses.

A convenience sample of 149 nurses participated in this study. The survey divided to two main parts: part one was related to nurses' demographics which included demographical data such as (age, sex, marital status, level of education, area of work, years of experience, and working hours before and after covid). While part two was included the survey items that divided in to three subscales: The Medical-Based Aspects consists of seven items. An example of the medical aspects items is "Does dexamethasone (Decadron) reduces the need of COVID-19 patients for mechanical respiratory assistance?". The Hospital-Based Aspects consists of four items. An example of hospital-based items is "Does the protocol of the hospital allow doctors to use the Decadron as a treatment for hospitalized COVID-19 patients?". The third subscale was included the Community-Based Aspects that involves four items. An example of this subscale is "The public is against using the Decadron ampule for the hospitalized COVID-19 patients". Nurses' response to the items by Yes or No. The items were coded as 1 for yes and 2 for no. The data analysis was conducted by using SPSS (Version25). The descriptive analysis was conducted using frequency, percentage, mean, and standard deviation. To identify the relationship between the aspects, Chi-square test was conducted.

RESULTS

The demographic characteristics of nurses was represented in table 1. The percentage of female nurses was 55% and the percentage of male nurses was 45%. The mean age of the participants was 30.7 years old, and the mean years of nurses' experience was 7.7 years. Regarding their level of education, the highest percent of nurses 48.3% were bachelor's degree holders, while only 10.1% nurses were a holder of post graduate degree in nursing. Also, more than half percent of the nurses 54.4% worked at critical care units such as (CCU, ICU, ER, and COVID-19 units), while the remaining nurses 45.6% were working at medical and surgical units. Most of the nurses were married 51%, and 44.3% were single.

Table 2 shows nurses' perception toward the use of dexamethasone (Decadron). The highest percentage of the nurses 68.5% responded that dexamethasone (Decadron) decreases the need for mechanical ventilation. Regarding hospital-based aspects, 49% of the nurses responded that dexamethasone (Decadron) affects patients' breathing negatively. In community-based aspects, our study results represented that 43.6% of the nurses were concerned regarding the impact of public among administration of dexamethasone

(Decadron) for COVID-19 patients. Moreover, 55.7% of the nurses represented that work facilities are not against administration of dexamethasone (Decadron) for COVD-19 Patients.

In table 3, the results show that there is a significant correlation between the safety of using dexamethasone (Decadron) with its' role in aggravating the chance to exposure to infection ($p < 0.01$). There was a significant relationship between the role of dexamethasone (Decadron) in escalate breathing and the fear or panic of facilities regarding using dexamethasone (Decadron) for their patients ($p < 0.04$). Also, the result shows a significant relationship between the safety of administering dexamethasone (Decadron) and its role for decreasing the need for mechanical ventilation ($p<0.02$).

DISCUSSION

This cross-sectional study showed that the use of dexamethasone for COVID-19 patients is challenging for nurses in Duhok City because the view of the community regarding the use of Dexamethasone for patients. The nurses new the benefits of using dexamethasone for COVID-19 patients which is represented through their responses as identifying the importance of using Dexamethasone for COVID-19 patients. This is related to their experiences with using this medication during the pandemic and the outcome of this medication in enhancing the health status of those patients. The nurses identified that dexamethasone decreased the need for mechanical ventilation and oxygen administration. Caring for COVID-19 patients with in almost two years and having an average of seven years of experience as nurses helped them to be more oriented regarding COVID-19 treatment and care. This outcome was supported by (Bosch, 2021; Group, 2020; Kino, 2021; Lammers, 2020). Dexamethasone (Decadron) can be given to patients with mild and moderate severity of COVID-19, so it is an effective medication for different severity of the disease.

Regarding the use of blood thinner for COVID-19 patients, in this study most of the nurses agreed that dexamethasone can be given for COVID-19 patients while they are taking blood thinners. A study showed that the effects of giving dexamethasone on anticoagulants might has a limited clinical significance (Bosch, 2021).

Regarding the prescription plan and the safety of dexamethasone for COVID-19 patients, the nurses responded that the physicians are allowing to describe dexamethasone for COVID-19. Based on the results, Dexamethasone is given to COVD-19 patients. Dexamethasone is included in the COVID-19 treatment guideline, and it is supported that it has a significant role in enhancing patients' outcomes (Lammers, 2020; Lester, 2020). The nurses got supported by the facilities to initiate of oral corticosteroids before physician assessment results in improving the quality and efficiency of care (Zemek et al., 2012).

Some community and cultural aspects have impact on the society development and health care system, and it influences the work of health care providers included the nurses. Based on our results, the facilities and the public are concerned about the use of dexamethasone for COVID-19 patients and the public influences the use of dexamethasone. It was clear from nurses' responses that public is not with the use of dexamethasone for COVID-19 patients because their wrong input regarding this medication as it can be used without any control. This could happen because the weakness in the health system in controlling the use of medication in our society. So,

people can access most of the medication even without physicians' prescriptions.

The study represented that nurses are familiar with the use of dexamethasone (Decadron) for COVID-19 patients and they use it as a safe medication for COVID-19 patients. The significant correlation between patient safety and the role of dexamethasone in increasing patients' exposure to infection was identified in our study. Also, the safety was linked to decreasing the need for mechanical ventilation while patients are taking dexamethasone.

CONCLUSION

This study represented that our nurses perceived the role of dexamethasone (Decadron) as a treatment for COVID-19 patients in decreasing the need for mechanical ventilation and oxygenation. The facilities have concern regarding the use of this medication for patients; however, they are using it based on the protocol. Nurses are knowledgeable regarding the use of this medication for patients and its' safety while they concern about the impact of community on their work as health care provider. Nurses need more interaction with community and facilities in increasing the awareness regarding the importance of dexamethasone for COVID-19 patients. The community needs more awareness and information regarding medication administration especially dexamethasone (Decadron). Also, it is suggested that the use of dexamethasone as a standard for COVID-19 patients in the absence of contraindications (Sterne 2020).

RECOMMENDATIONS

Based on the results of the current study, the authors recommended more study to be conducted to identify COVID-19 patients' knowledge and perception regarding the use of Dexamethasone and other medications that are used for COVID-19. Also, increasing community orientation and knowledge regarding this disease by television programs, seminars, and group works.

Limitation: Insufficient sample size is one of the limitations of this study because the nurses did not have an interest to participate in the study. This could be because the staff shortage and limited experience in participating in such study.

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Table 1: Socio Demographics Characteristics of Participants

Demographics	No	%
Gender		
Male	82	55
Female	67	45
Marital Status		
Single	66	44.3
Married	76	51
Widow	7	4.7
Level of Education		
High school nursing graduate	3	2
Institute nursing graduate	59	39.6
College nursing graduate	72	48.3
Postgraduate nursing graduates	15	10.1
Working Area (Unit)		
Medical	42	28.2
Surgical	26	17.4
Critical care	81	54.4
Age	Mean± SD	
	30.7 ± 6.9	
Years of Experience	7.7 ± 6.9	

Table 2: Frequency and Percentages of Nurses' Responses Toward Decadron Uses

Items	Yes		No	
	No	%	No	%
Medical-Based Aspects				
Can COVD patients receives Decadron as a treatment?	137	91.9	12	8.1
Decadron reduce the need for mechanical respiratory assistance	102	68.5	47	31.5
Decadron reduce the need of O2 for hospitalized patients	71	47.7	78	52.3
Decadron can be given to patients with simple severity	100	67.1	49	32.9
Hospitalized patients expose to infection when receive Decadron	38	25.5	111	74.5
Can Decadron be used for patients with chronic diseases?	83	55.7	66	44.3
Decadron cab be given with blood thinners	104	69.8	45	30.2
Hospital-Based Aspects				
Your hospital protocol allows doctors to use the Decadron for hospitalized COVID-19 patients?	113	75.8	36	24.2
Decadron is safe for the hospitalized patients?	106	71.1	43	28.9
Have you received information about advantages and disadvantages of using Decadron for patients?	91	61.1	58	38.9
Can Decadron escalate the breathing of the patients?	73	49.0	76	51.0
Community-Based Aspects				
Facilities are against using the Decadron to their patients?	66	44.3	83	55.7
Public impacts you to administer Decadron to the COVID patients?	65	43.6	84	56.4
Public is against giving Decadron for COVID-19 patients?	64	43.0	85	57.0
Facilities have a panic of using the Decadron for their patients?	69	46.3	80	53.7

Table 3: The Correlation Between Medical, Hospital, and Community Aspects of Using Dexamethasone (Decadron) For Covid-19 Patients

Dexamethasone is safe for COVID-19 patients	Yes		No		P-value
	No	%	No	%	
Exposed to infection when patients receive dexamethasone					
Yes	21	27	17	11	0.01
No	85	79	26	32	
Dexamethasone escalates breathing					
Facilities have a panic about using dexamethasone					
Yes	40	33.8	33	39.2	0.04
No	29	35.2	47	40.8	
Dexamethasone is safe for COVID-19 patients					
Dexamethasone decreases the need for mechanical ventilation					0.02
Yes	43	49.1	63	56.9	
No	26	19.9	17	23.1	