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***Nurses Role in the Covid-19 Pandemic,
Knowledge and Attitudes of Nursing Staff –
Implications for the Future***

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Abstract

Covid-19 created the biggest worldwide public health emergency. Nurses as the largest component of the health care workforce, play an important role both locally and globally in managing. The web-based survey lasted about two weeks between April-May 2020 assessed the nurses' knowledge of and attitude towards Covid-19. Eighty-one nurses from Vlore, Albania, were study participants. Most were female and belonged to the age group 20-29 years, with less than 5 years of work experience. The majority of nurses reported having sufficient knowledge about Covid-19. The sources of information included television, social media, work institution, and the Ministry of Health. All nurses refer that Covid-19 is a viral infection, while 14% of them refer that there is a vaccine available. About 39% state that antibiotics are the first-line treatment. The results suggest appropriate information sources, participation in programs for the prevention and control of infections, and mental health support for nurses.

Keywords: Covid-19, pandemic, nurses, knowledge, attitudes.

Introduction

Six months ago, exactly on March 11th, the World Health Organization (WHO) declared the status of a pandemic due to the rapid and high spread of novel coronavirus Covid-19 worldwide (WHO, 2020a). The first cases of this novel coronavirus were identified in the Wuhan, Hubei Province of China on 31 Dec 2019 (WHO, 2020b). The most common symptoms in Covid-19 patients are fever, dry cough, dyspnea, musculoskeletal symptoms, nausea/vomiting, diarrhea, and anosmia (Larsen, J. R et al., 2020; Wang D et al., 2020). While persistence of at least one symptom in particular, fatigue and dyspnea, was observed in recovery Covid-19 patients (Carfi A et al., 2020). The most common routes of the disease transmission are by the droplets and aerosols in health care facilities (Jayaweera, M et al., 2020; Tang, S et al., 2020). The severity of the symptoms and the risk to get the disease is higher in cancer patients, people with chronic kidney disease, heart conditions, severe asthma, and obesity. More at risk are also people with type 2 diabetes, males and smokers (CDC, 2020; Williamson EJ et al., 2020; Zheng, Z et al., 2020). Currently, the therapies for Covid-19 are supportive, and prevention remains the best way to stop the spread of infection (Cascella M et al., 2020). In addition, health care workers including nursing staff, play a key role in the transmission of Covid-19 since they are dealing with the virus at the front lines (WHO, 2020c) and are more likely to get infected (Bielicki, J. A et al., 2020). Also, in comparison with the general population, health care professionals have a higher risk for infection, especially those who operate without the appropriate protective measures (Nguyen, L. H et al., 2020). But different studies carried out about health care professionals' knowledge and attitudes found misconceptions and insufficient knowledge in the management of the situation (Olum R et al., 2020; Kassie, B. A et al., 2020;

Abdel Wahed, W. Y et al., 2020). In Albania, the status of lockdown was declared on March 12th, and the present study was carried out a month later. At that time, the studies that assessed the knowledge of healthcare professionals, including nurses, for Covid-19 were insufficient, and the few ones were carried out in China (Zhang, M et al., 2020). As nurses present the largest component of the health care workforce (AACN, 2019), they play a very important role, both locally and globally, in managing a health crisis such as a pandemic (Corless, I. B et al., 2018). Besides, there is no sufficient evidence on the type of effective training interventions needed for health care professionals to enhance their disaster response knowledge and skills, including pandemics (Williams J et al., 2008). On the other hand, rural and regional areas, as well the absence of prepared health staff, are determining factors in managing a pandemic (Dewar B et al., 2014). To the best of our knowledge, this is the first study investigating nurses' roles, knowledge and attitudes surrounding the Covid-19 pandemic in a Western Balkan country.

Methodology

Study design, timeframe and study population

This is a descriptive transversal study which was conducted online. The call for participation in the study included a two-week period between April and May 2020. The participation link was posted on social media where the nursing staff were invited to participate. The inclusion criterion was that the nurses should be only from the city of Vlora, Albania. A status of reminder was constantly posted throughout the data collection period.

Questionnaire

A literature-based questionnaire was developed for data collection. A variety of studies related to Covid-19 served as the basis for its design. It should be noted that the announcement of the state of the Covid-19 pandemic was very recent at the time the study was undertaken. Related studies were conducted mainly in China, where the initial outbreak of the pandemic took place. In addition to questions related to nurses' knowledge and attitudes about Covid-19 corona virus, the questionnaire included the section of socio-demographic data such as age, gender, and workplace, as well as various questions related to the nursing profession. Knowledge and attitudes were assessed with no/yes and multiple choice questions.

Data analysis

Descriptive statistics were used to analyze the data. Ten participants were excluded from statistical analyses, specifically because they did not complete part of the questionnaire. Single variables were described with frequency distribution and percentage, and were grouped into tables. The Epi Info™ software version 7.1.3.10 was used for the statistical analysis.

Ethical considerations

Each phase of the design and implementation of the study was guided by ethical principles for medical research that include the human subject matter of the Helsinki Declaration (AMA, 2013) and European Commission ethics for researchers (EC, 2013). By completing the questionnaire, all participants gave their informed consent to be part of this study.

Results

Sample characteristics

A total of 81 participants, nursing staff, were formally enrolled in the study. As shown in table 1, the majority were women (81.48%) and aged between 20-29 years old, (62.96%). Most of them worked in urban areas, in hospital settings, and primary health care, and with less than 5 years of work experience (68.35).

Characteristics	Sub-category	N (%)
Gender	Female	66(81.48)
	Male	15(18.52)
Age (years)	20-29	51(62.96)
	30-39	14(17.28)
	40-49	7(8.64)
	>50	9(11.11)
Work place	Urban area	69(85.19)
	Rural area	12(14.81)
Type of work facility	Hospital	42(51.85)
	Primary health care center	34(41.98)
	Emergency department	4(4.94)
	Policlinic	1(1.23)
Work experience (years)	<5	54(68.35)
	5-10	6(7.59)
	>10	19(24.05)

Table 1. Sample characteristics

Participants' knowledge and attitudes towards Covid-19

Table 2 shows the knowledge and attitudes questions about Covid-19 with no/ yes answers. Most of the participants expressed good knowledge of Covid-19. Inaccuracies have been observed mainly in the treatment of the disease and in the willingness to be vaccinated if a vaccine is invented. Some

participants (13.58%) think that there is already a vaccine for Covid-19 available.

Questions	Answers	N (%)
Did you know that the outbreak of the Covid-19 epidemic is a worldwide problem?	No	2 (2.47)
	Yes	79 (97.53)
Is Covid-19 an infection caused by a virus?	Yes	81 (100.00)
Is Covid-19 transmitted by close contact with an infected person?	No	2 (2.47)
	Yes	79 (97.53)
Is the quarantine period for Covid-19 two weeks?	No	4 (5.00)
	Yes	76 (95.00)
Is there a vaccine for Covid-19?	No	70 (86.42)
	Yes	11 (13.58)
Are antibiotics the first line of treatment?	No	49 (60.49)
	Yes	32 (39.51)
Can frequent washing of hands with soap and water, and the use of masks help prevent the transmission of the disease?	Yes	81 (100.00)
Are chronic patients more at risk of disease and mortality from Covid-19?	No	2 (2.47)
	Yes	79 (97.53)
Are health professionals more at risk of getting infected?	No	1 (1.23)
	Yes	80 (98.77)
Can Covid-19 be life-threatening?	No	3 (3.70)
	Yes	78 (96.30)
Do you think that because of your profession you can get Covid-19?	No	5 (6.17)
	Yes	76 (93.83)
Are you afraid that any of your family members may be affected by Covid-19?	No	6 (7.41)
	Yes	75 (92.59)
If you are affected by Covid-19 will you be quarantined?	No	1 (1.23)
	Yes	80 (98.77)

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Can Covid-19 infection be prevented by frequent hand-washing with soap and water?	No	13 (16.25)
	Yes	67 (83.75)
Would the prevalence of Covid-19 decrease if all health professionals participated in infection control programs?	No	9 (11.11)
	Yes	72 (88.89)
Are you ready to get vaccinated if a vaccine for COVID-19 is invented?	No	11 (13.75)
	Yes	69 (86.25)

Table 2. Knowledge and attitudes related to Covid-19, no/yes questions

Table 3 shows participant's knowledge and attitudes related to Covid-19 through multiple choice questions. The table presents the answers with the highest frequency.

Questions	Answers	N (%)
How do you rate your knowledge of Covid-19?	Insufficient Sufficient	14(17.28) 67(82.72)
How do you evaluate your attitudes towards Covid-19?	Insufficient Sufficient	2(2.50) 78(97.50)
Possible symptoms of Covid-19:	fever, dry cough, sore throat, difficulty breathing	65(80.25)
Why Covid-19 is not a common flu?	-There is no treatment or vaccine, - it is about 4 times more infectious, - it is also transmitted by people who are not sick (asymptomatic) -There is no treatment or vaccine, it is also transmitted by people who are not sick (asymptomatic) -There is no treatment or vaccine	31(38.27) 17 (20.99) 14 (17.28)
What worries you most about yourself and your family?	-That the immune system (yours or family members') may not be able to cope with the disease if you are affected by Covid-19, which may be life-threatening -That the immune system (yours or family members') may not be able to cope with the disease if you are affected by Covid19,	27 (33.75) 17 (21.25)

	-that your life may be threatened, -that you may not receive proper treatment due to hospital overload	
	That it could be life-threatening	10 (12.50)
	I'm not worried at all	9 (11.25)
What was your source of information on Covid-19?	-Television, -Social Networks, -The institution where I work - Ministry of Health	21 (25.93)
	-Television, -The institution where I work, - Ministry of Health	12 (14.81)
	-Television, -Social Networks, -The institution where I work, -Ministry of Health, -Friends / Family	11(13.58)

Table 3. Knowledge and attitudes about Covid-19 (multiple choice questions)

Discussion

Our analysis of socio-demographic data found that out of the overall number of 81 participants, 81.48% (n=66) were females, 62.96% belonged to the age group 20-29 years old, 85.19 % worked as nurses in urban areas, 51.85% worked in hospital

settings and 41.98% in primary health care centers. More than half of the participants (68.35%) had <5 years of experience and 24.05% (n=19) had more than 10 years of work experience (Table 1). Table 2 shows that of 81 nurses, 79 (97.53%) know that the outbreak of the Covid-19 is a worldwide problem. All participants report that Covid-19 is an infection caused by a virus. In this context, the results of the present study are not different from the results of a review study in which there was found a good knowledge of Covid-19 among different target groups of healthcare workers (Puspitasari, I. M et al., 2020). But in comparison with another study where the majority of participants were female nurses, our study participants showed better knowledge as all participants reported that Covid-19 infection is caused by a virus, compared to the study where only half of the participants gave a correct answer regarding this question (Marwa M et al., 2020). Human-to-human transmission through airborne droplets and close contact is by far the most confirmed way of transmitting the virus (Lotfi, M et al., 2020). In relation to this, the nurses participating in the study show good knowledge since Table 2 illustrates that 97.53% of them confirm this fact. As noted from Table 2, 60.49% of participants in the study have reported that antibiotics are the first line of treatment. While research studies suggest that, so far, there is no genuine treatment, and current therapies for Covid-19 are mostly symptomatic. For instance, the use of antibiotics is mainly suggested for patients with signs of pneumonia (Lotfi, M et al., 2020). All participants in the study agree that frequent washing of hands with soap and water and the use of masks is a very good way to prevent the spread of infection. This fact is supported by the literature as a study found that these simple approaches may help to slow the spread of coronavirus (Ma, Q. X et al., 2020). The results as seen in Table 2 suggest that nurses in the study are aware that chronic patients are at higher risk of infection and

mortality from severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Studies found that patients with chronic diseases and those with comorbidities are more at risk to get infected (Sanyaolu, A et al., 2020; Zhang, J et al., 2020). Also, studies found that health care professionals have a higher risk of getting infected with corona virus (Nguyen, L. H et al., 2020; Ali, S et al., 2020; Wang, J et al., 2020). Almost all nurses in the study agree that being a health care professional increases the risk of getting infected. 88.89% of them express that the participation of health care professionals in infection control programs helps to decrease the prevalence of infection. Current studies support this fact (Islam, M. S et al., 2020). Lack of information was noted regarding the coronavirus vaccine, since 12.58% of participants report that a vaccine is available for Covid-19 virus, while 13.75% report that they are not willing to get vaccinated. The majority of participants (92.59%) are worried that both their lives and the lives of their family members or relatives may be threatened by infection from the virus. The impact of Covid-19 on mental health among health care professionals in different countries, including Albania, found high levels of anxiety, depression, and fear of getting the virus and spreading it to relatives as well as the lack of mental support in workplace (Htay MNN et al., 2020). As seen in Table 3, nurses in the study have expressed that they have sufficient knowledge and positive attitudes about Covid-19 respectively (82.72%) and (97.50%). 80.25% (n=65) of the participants reported recognition of the main symptoms of Covid-19. A review study found the most prevalent symptoms in patients infected by the novel coronavirus were fever, cough, fatigue, and difficulty breathing (Grant, M. C et al., 2020). The majority of nurses in the study, 38.27% (n=31), report that Covid-19 is not common flu because there is no vaccine or treatment available, it is four-times more infectious than flu, and can be transmitted by people who are asymptomatic but have tested

positive with the virus. Only 17.28% of participants in the study link the Covid-19 severity to the lack of vaccine. Despite the fact that Covid-19 symptoms are similar to flu viruses symptoms (both affecting the respiratory tract and transmitted through droplets), Covid-19 infection is more severe and has a higher mortality rate than the common flu. In addition, there are vaccines available for the common flu or influenza. (WHO, 2020d). 33.75% of the nursing staff in the study are concerned that one of their relatives will be infected with Covid-19 and may not be able to cope with the disease. Fear of not receiving proper treatment due to hospital overloads was reported by 17 nurses. Similar attitudes of the health care professionals are found in other studies and for that mental and other types of support are recommended (Adams JG and Walls RM, 2020). In Table 3, 25.93% (n=21) of the participants in the study have obtained their knowledge of Covid-19 from several sources such as television, social networks, institutions where they work, and the Ministry of Health. Nurses are a source of information for their patients and the community in general and, in this regard, their resources of information on Covid-19 must be trusted and approved by relevant bodies (Karin T et al., 2020).

Limitations

A non-validated but simply literature-based designed questionnaire used for data collection, along with the small research sample constitute limitations that should be considered. This is a cross-sectional study conducted online, very close to the time of the declaration of a pandemic and the lockdown in Albania, thus limiting the generalization of results. Despite these limitations, our findings provide valuable information about the knowledge and attitudes of nursing staff in Albania at the early onset of the pandemic.

Conclusion and Recommendations

Supply of appropriate information sources from guidelines approved by relevant bodies is suggested. Participation in educative training programs for the prevention and control of infections related to Covid-19 should be assured for all nursing staff. Mental health support for nurses in workplace is recommended.

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