

Intention to Care for COVID-19 Patients Among Nurses Working at Health Care Institutions of Debre Tabor Town, North Central Ethiopia

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Background: Coronavirus disease 2019 (COVID-19) has caused many challenges for health care providers. Nurses meet patients with coronavirus disease and offer care for newly communicable diseases. Despite global and national efforts to prevent the spread, the outbreak is still on a rise, and studies on the health care behaviors of nurses were scarce in the study setting. Therefore, this study was intended in addressing nurses' intention to care for coronavirus disease 19 patients and its determinants among nurses working at Debre Tabor town Health Care Institutions, 2020.

Methodology: An institutional-based cross-sectional study was conducted among 163 nurses working at health care institutions of Debre Tabor Town, from June 01 to 15/2020. The data were collected using tools with a self-administration questionnaire adapted from the theory of planned behavior and different kinds of literatures. All nurses working at Debre Tabor health care institutions were included. Data were entered using Epi-data 4.2.0.0 statistical software, and analysis was done by Stata version 14 statistical software. Binary logistic regression model was used for analysis. Strength of association was measured using the odds ratio with 95% CI, and the level of significance was estimated at P-value ≤ 0.05 .

Results: Nurses' intention to care for COVID-19 patient was 59.5% (95% CI; 58.7:60.3). Having better working experience (adjusted odds ratio (AOR) =2.3; 95% CI; 1.120, 4.910), caring experience for infectious disease (AOR=2.5; 95% CI: 1.10, 5.50), good perceived behavioral control (AOR=2.33; 95% CI: 1.13, 4.8), and subjective norms (AOR= 2.14; 95% CI: 1.05, 4.36) were significantly associated with intention of caring behavior.

Conclusion: Nurses' intention to care for COVID-19 patients was low. Working experience, the experience of caring for infectious disease, self-efficacy, and subjective norm were independently related with nurses' caring intention. The government should work on improving nurse's confidence in disaster management, design disaster management nursing education, and frequent support of nurses.

Keywords: theory of planned behavior, coronavirus, nurse, intention to care, Ethiopia

Background

Corona Virus Disease has been a worldwide health problem issue;¹ manifested by signs/symptoms of fever, dry cough, fatigue, myalgia, dyspnea, diarrhea, and bilateral lung involvement with ground-glass opacity.²⁻⁴ Due to the great request for repeated attention for patients and closeness to respirational discharges, healthcare workers especially nurses⁵ have been a great threat of coronavirus infection.

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The nature of the infection and working behavior carries implications for nurse working conditions and personal safety that need to be recognized.^{6,7} Nurses are in charge of nursing care quality, have the greatest contact time with admitted patients. Compassionate caring; described by competency plus individualized considerate held via the expertise and carried out through proper behavior.⁸ However, unsuitable jobs, working for a longer time, inadequate properties, unfortunate administration, scarcity of human resources, and difficulty in crisis determination, management, and avoidance⁹ were some of the hindrances to provide appropriate care for patients in low-income nations.

In addition, caring for coronavirus infected patients at intensive care unit focused on providing circulatory, respiratory, psychological, urinary, and digestive care plus checking.¹⁰ Different factors affect nursing care,¹¹ personal susceptibilities for adjustment, threat prediction, fear, level of understanding on corona virus disease,¹² the occurrence of death at the workplace, recognition of the condition's contagion, and casualty,¹³ negative belief, job stress, social pressures,^{14,15} normative beliefs, and subjective norms.¹⁶ Moreover, studies revealed that male Health care providers, medical doctors, permanent engagement, the consciousness of disease threat, supposed individual wellbeing, knowledge towards the COVID 19, role-specific understanding, training on pandemic preparedness and response, and self-reliance individual performance^{17,18} increased willingness to work during the pandemic. So, safeguarding the health workforce through establishing a safe healthcare system¹⁹ has paramount importance.

As nurses have nearby interaction and participation in therapeutic measures,⁷ it is important to understand the beliefs underlying nurses' caring intention from a sound theoretical framework which can then update intervention strategies to encourage greater caring intention behavior.

The occurrence of deliberate behavior is the drive to accomplish that behavior.²⁰ The Theory of Planned behavior (TPB) is grounded on the conventions that human beings are reasonable, made logical utilization of existing evidence, and reflect the effects of their activities before involving in a behavior. Performing the behavior is in direct relation with the strength of individuals' intention to implement the behavior.¹⁵ The intent of caring behavior has been predicted by the theory of planned behavior; attitude of the individuals' subjective norms, and self-efficacy (perceived behavioral control).²¹

During severe acute respiratory syndrome (SARS) pandemic health care workers confront whether to deliver care for patients or keeping individual well-being.¹⁵ To increase nurse ability to deliver appropriate care for COVID 19 patients in the study setting, take responsibility for caring diseased, and maximize the safety of nurses is important. As such, identifying the intention of nurses to care for COVID-19 patient could have a significant value for facilitating COVID-19 treatment and isolation centers. Hence, this study was intended at assessing nurses caring intention for COVID-19 patients and its determinants in Debre Tabor town, north-central Ethiopia; using TPB as a framework.

Methodology

Study Setting, Design, Period, and Population

A cross-sectional study was conducted in Health Care Institutions of Debre Tabor town, June 01–15 2020. There are one Referral Hospital and four Health Centers. Nurses working in four health care organizations were the source population. An estimated 194 nurses were working in four health care institutions. All nurses working in Debre Tabor town health care institutions were included. Nurses who were not willing to provide written consent and annual leave were excluded.

Sample Size Determination

A single proportion formula was used to calculate the estimated sample size (n); by considering proportion (P) =50%, level of significance ($\alpha=0.05$), and marginal of error (D = 0.05)

$$n = \frac{(Z_{\alpha/2})^2 P(1-P)}{d^2} = \frac{(1.96)^2 (0.52)(0.48)}{(0.05)^2} = 383.54 \sim 384$$

$$\text{Then } n = (Z^{\alpha/2}) (pq)/d^2 = 384 \quad n = (1.96)^2$$

After adding non response rate of 10%, $n=423$

Reduction formula was used since the total population of <10,000. $n = no / (1 + (no - 1/N))$

$N_{\text{final}} = 130$ Where $n = 423$ and N was the estimated number of nurses (total population size, 194). Even if the sample size required is 130, we include all nurses (163) present at the time of the data collection period.

Methods of Data Collection

The data collection tool was adopted from the theory of planned behavior^{15,21} and collected through self-

administer method. The data collection tool has socio-demographic and economic factors, knowledge-related factors, attitude-related, subjective norm, and perceived control variables. The survey was conducted by four Bachelor of Science degree nurse data collectors and one master's supervisor. A total of 8 Likert scale questions were asked to assess nurses' intention of caring for COVID-19 patients. After computing the mean of the responses, the intention was grouped into two (positive and negative). Similarly, six questions were used to assess perceived control belief, five questions to assess normative belief, and ten questions to assess knowledge of COVID-19.

Variables

Dependent Variables

Intention to care (Positive, Negative)

Independent Variables

Socio-demographic and personal related variables (Age of nurses, Marital Status, Sex Income per month, Experience, training, place of work); Knowledge related to COVID 19; Attitude; Subjective norm, and perceived related factors.

Operational Definitions

Knowledgeable – if the score is greater than or equal to the average score.

Intention to care was considered by nurses' perception to care COVID-19 patient. Those having a score above or equal to the mean score have good intention of caring behavior.

Attitude towards caring for COVID-19 patients was measured using nurses' beliefs and assessment of behavior application.

Subjective norms – the nurses' normative beliefs in caring for COVID 19 patients, with the attention of others (such as parents, friends, siblings, a spouse, physician, coordinator nurse), and their inspiration to conform with the anticipations of their importance.²²

Perceived behavioral control – perception of caring for COVID-19 patients' (easiness or difficulty).

Data Quality Control

One day of training was provided on administering the tool during data collection, and the ethical aspect. The completeness of each tool was checked daily. Data were entered by two data clerks and a cross-check was done using Stata software.

Method of Data Analysis

EPI-Data statistical software version 4.2.0.0 was used for data entry and STATA Version 14 statistical software for analysis. The model used for analysis was Binary logistic regression. Those variables with a p-value of less than 0.25 during bi-variable analysis were taken to multivariable analysis. Statistical significance was declared for variables with a p-value of less than 0.05 during multivariable analysis. Text, figures, and tables were used for data presentation.

Result

Socio-Demographic Factors

Overall, 163 nurses were involved. Nearly, 62% (101) of nurses were in the age group of less than or equal to 31 years, with a mean (\pm SD) of 31.7 ± 5.7 years. About, 72.4% (118) were married and BSc in educational level. The majority, 94.5% (154) were orthodox Christian in religion. One hundred eighty-two, 50.3% of nurses had a monthly earning of less than 5727 Ethiopian Birr. More than half, 57.7% (94) were working in the ward, followed by 27.6% (45) in outpatient (Table 1).

Perceived Behavioral Control (Self-Efficacy)

A total of 6 Questionnaires with a 5-point Likert scale were asked to assess the perceived control belief of nurses. Those six questions were computed and perceived control grouped into two using the mean score as a cut of point (Positive and negative control). More than half, 54% (88) of nurses had negative perceived behavioral control. Moreover, 61% (99) of nurses had positive subjective norms.

Intention to Care for COVID-19

A total of 163 nurses functioning at health care institutions of Debre Tabor town were involved. Eight Likert scale questionnaires were used for assessing nurses' intention of caring behavior. The nurse's intention to care for coronavirus infected was, 59.5% (95% CI; 58.70 to 60.30).

Factors Associated with Nurses Caring Intention Behavior

A binary logistic regression model was used for analysis. Sex, working experience, the experience of caring for infectious disease cases, participating in COVID-19 related training, knowledge of COVID 19, perceived

Table 1 Socio-Demographic Characteristics of the Study Participants'

Socio-Demographic Factors	Frequency (%)
Gender	
Male	85 (52.15)
Female	78 (47.85)
Age	
≤31 years	101 (61.96)
>31 years	62 (38.04)
Marital status	
Unmarried	40 (24.54)
Married	118 (72.39)
Divorced/separated	5 (3.07)
Religion	
Orthodox	154 (94.48)
Others	9 (5.52)
Level of education	
Diploma	41 (25.31)
BSc	117 (72.22)
MSc	4 (2.47)
Monthly income	
≤5727 ETB	182 (50.31)
>5727 ETB	81 (49.69)
Working experience	
<3 years	6 (3.68)
3–6 years	77 (47.24)
>6 years	80 (49.08)
Working unit	
Emergency	24 (14.72)
Ward	94 (57.67)
Outpatient	45 (27.61)

Note: Others: Muslim, catholic and protestant.

Abbreviation: ETB, Ethiopian birr.

behavioral control, and subjective norm were associated with nurses caring intention during bi-variable analysis. Whereas, in multivariable analysis; working experience, the experience of caring for infectious disease perceived behavioral control (self-efficacy), and subjective norm were statistically significant (Table 2).

The study showed that nurses who had 8 years and above working experience were 2.33 times more likely to have a positive intention of caring for COVID-19 patients than nurses who had working experience of fewer than eight years (adjusted odds ratio (AOR=2.3, 95% CI: 1.1,4.9)). Likewise, the odd of positive intention to care was 2.45 times more likely among experienced nurses of caring

infectious disease cases than those without experience (AOR=2.45; 95% CI: 1.09, 5.49). In addition, nurses who had positive perceived control were 2.33 times more likely to have a positive intention of caring for COVID-19 patients than nurses who had negative perceived control (AOR=2.33; 95% CI: 1.13, 4.78). Those care providers with positive subjective norms were 2.14 times more probably for the positive caring intention in contrast to nurses with negative subjective norms (AOR=2.14; 95% CI: 1.05,4.36)

Discussion

COVID-19 is an infectious disease that requires frequent patient care from health care providers. Since nurses comprise the larger proportion HCPs and the nature of the contagion carries implications for nurse working conditions and personal safety to be recognized. As such, identifying the intention of nurses had its contribution in reducing the burden of the pandemic.

The current study showed that the intention to care for COVID-19 patients was 59.5%. The finding was higher than studies conducted in Taiwan, 42.7%,²³ and Korea 55.1%.²² The possible reasons could be previous studies were conducted during the SARS pandemic. But, lower than studies in Australia, 62%,²⁴ and Portland, 90%.²⁵ This discrepancy could be due to differences in sample size and study setting. The study conducted in Australia was conducted among 83 nurses working in the intensive care units. The second study was conducted during the influenza outbreak. Moreover, the discrepancy could be in relation with difference in the health care policy, previous exposure to pandemics, nurses' welfare, preparedness, and economical level of the country.

The study showed that nurses who had eight years and above working experience were 2.33 times more likely to have positive intentions of caring for COVID-19 patients than nurses who had working experience of fewer than eight years. This is supported by other findings from China and Japan.^{26–28} This might be due to because of working experience increase the knowledge, and skill of nurses caring for patients. Moreover, professional experience increases job satisfaction.²⁹ Less experienced nurses were displeased with their payment, workload, financial benefit, and the opportunity to continue their education.³⁰

The odds of positive intention to care was 2.45 times more likely among experienced nurses on infectious disease than nurses without such experience. This finding is in agreement with previous studies conducted in China and

Table 2 Factors Associated with Nurses' Caring Intention of Coronavirus 2019 Patients

Variables	Intention to Care		COR	AOR	P-value
	Positive No. (%)	Negative No. (%)			
Sex					
Female	40 (41.2)	38 (57.6)	Ref.	Ref.	
Male	57 (58.8)	28 (42.4)	1.93 (1.03, 3.65)	1.35 (0.64, 2.85)	
Working experience					
≤8 years	71 (73.2)	34 (51.5)	2.57 (1.33, 4.97)	2.33 (1.12, 4.91)	0.026
>8 years	26 (26.8)	32 (48.5)	Ref	Ref	
Experience caring for infectious disease pts.					
Yes	80 (82.5)	41 (62.1)	2.86 (1.39, 5.9)	2.45 (1.09, 5.49)	0.029
No	17 (17.5)	25 (37.9)	Ref.	Ref.	
Participating in COVID 19-related training					
Yes	34 (35.1)	13 (19.7)	2.2 (1.05, 4.59)	1.29 (0.57, 2.93)	
No	63 (64.9)	53 (80.3)	Ref.	Ref.	
Knowledge of COVID-19					
Good	58 (59.8)	26 (39.4)	2.29 (1.21, 4.34)	1.66 (0.82, 3.4)	
Poor	39 (40.2)	40 (60.6)	Ref.	Ref.	
Perceived behavioral control (self- efficacy)					
Positive	54 (55.7)	21 (31.8)	2.69 (1.4, 5.18)	2.33 (1.13, 4.78)	0.021
Negative	43 (44.3)	45 (68.2)	Ref	Ref	
Normative belief					
Positive	66 (68.0)	33 (50.0)	2.13 (1.12, 4.05)	2.14 (1.05, 4.36)	0.036
Negative	31 (32.0)	33 (50.0)	Ref	Ref	

Note: Significant: P-values≤0.05.

Abbreviation: Ref, reference.

South Korea.^{28,31} The possible reasons could be better experience in caring for infectious disease, the better to practice preventive practice with confidence, and increased if provided with adequate personal protective equipment. In Korea, almost half of nurses had exposure of caring infectious disease cases, and twenty-six percent had the

experience of caring for severe acute respiratory syndrome infected patients.¹⁵

Nurses who had positive perceived control were 2.33 times more likely to have positive intention of caring for COVID-19 patients than nurses who had negative perceived control. The result of the current study is similar to other

findings in Korea and Israel.^{15,32–34} This could be positive emotion decrease psychological distress, fear, and anxiety,^{35,36} in turn, improve nurses' working intention. Moreover, perceived behavioral control expectations improve actual control of nurses' skills. Similarly, those nurses who had positive subjective norms were 2.14 times more likely to have positive intention to care than nurse with negative subjective norms. The finding is similar with findings from Korea and United States of America.^{32,37} In contrast, the finding from Korea revealed that subjective norms were not associated with nursing intention to care.²² This could be due to those with normative control intend to execute more beneficial behaviors. The paper has its own limitation. Hence, the data was collected during the lockdown of the country, the data was not triangulated with the qualitative part, and conducted in a limited setting. Moreover, it does not show cause effect relationship. Therefore, researcher should work on qualitative analysis of identifying motivating factors, barriers of intention to care during pandemic season, and what should be taken for tackling future pandemics.

Conclusions

In the current study, the intention to care for corona Virus disease patients was low. Working experience, having experience of caring for infectious disease, subjective norm, and perceived control were independently related to nurses' caring intention behavior for COVID 19 patients. The government should work in providing COVID 19 related pieces of training, improve nurse's confidence in disaster management, design disaster management nursing education, and frequent support of nurses will have an important input in improving nurse's intention to work during the pandemic.

Abbreviations

AOR, Adjusted Odds Ratio; CI, Confidence Interval; COR, Crude Odds Ratio; COVID-19, Corona Virus Disease 2019; IRERC, Institutional Research Ethics Review Committee; TPB, Theory of Planned Behaviour; SARS, Severe Acute respiratory syndrome.

Data Sharing Statement

All relevant data are within the manuscript.

Ethical Approval and Consent to Participate

Ethical clearance was secured from Debre Tabor University, College of Health Sciences Health Research Ethical Review

committee. Information regarding the purpose of the study, voluntary nature of participants, risk imposed due to involvement presented in the information section of the survey. Informed written consent was taken. Confidentiality of the information was maintained and the data were recorded anonymously throughout the study. This study was conducted in accordance with the Declaration of Helsinki.

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Author Contributions

All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed to submit to the current journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

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Disclosure

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