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ORIGINAL RESEARCH

Predictors of Health-Care Workers' Unwillingness to Continue Working During the Peak of COVID-19 in Western Ethiopia: An Extended Parallel-Process Model Study

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Purpose: Willingness to work in disasters is context-specific and corresponds to the nature, magnitude, and threats posed by a particular public health emergency. None us is certain that our health professionals will continue to provide service should the COVID-19 pandemic crisis climb to its worst level. It was with this uncertainty in mind that this study was done to assess predictors of the unwillingness of health-care workers (HCWs) to continue providing their professional services during the climax of the COVID-19 crisis.

Methods: This was a facility-based descriptive cross-sectional study undertaken among 633 HCWsin western Ethiopia.

Results: Overall, 205 (32.4%) providers said that they would be unwilling to continue work if COVID-19 peaked. Of these, 176 (27.9%) respondents reported that they would stop going in to work before they were at greatest risk. Statistical analysis performed to predict HCWs unwillingness' to continue work at peak COVID-19 showed male sex (AOR 11.4, 95% CI 8.32–12.6), younger age (AOR 25.3, 95% CI 4.61–40.67), lack of experience in handling similar pandemics (AOR 5.15, 95% CI 1.1–255), and low perceived level of hospital preparedness (AOR 2.05, 95% CI 0.80–5.21) were predictors of unwillingness. In accordance with the extended parallel-process model, higher threat perception (P≤0.001) and low efficacy perception ($P \leq 0.040$) were associated with unwillingness of the HCWs to continue working.

Conclusion: The proportion of HCWs unwilling to continue their job during COVID-19 is sufficient to affect efforts tof fight the pandemic. As the question of whether our HCWs must risk themselves to treat COVID-19 patients does not have a uniform answer, working on predictors of potential unwillingness is of paramount importance.

Keywords: COVID-19, unwillingness, pandemic, health-care workers

Introduction

Whether or not health-care workers (HCWs) should go to work during disasters to continue serving their community is a common ethical dilemma, in particular whether or not they ought to continue to provide care during an outbreak like COVID-19.[1,2]

HCWs across the world face an ethical dilemma when a pandemic arises as a result of the conflict between discharging their duty to provide care and preserving their own health and that of their family.[3–5] Several studies have supported the

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argument that the HCWs need to maintain a balance between fear for their own personal safety and their duty to provide care to the sick. A study in Canada showed that 90% of the public questioned said that HCWs should face all risks if safety precautions were taken, and 47% agreed that the government had the right to conscript HCWs during a pandemic.[6–10] Another survey carried out to evaluate the willingness of Israeli HCWs to report to work after an unconventional missile attack found that about 42% were willing to report to work and that this would increase to 86% if personal safety measures were provided.[11–13]

On the other hand, researchers have recognized the fact that HCWs across our globe are increasingly faced with the constant threat of confronting severe and contagious diseases. For instance, given that 30% of all SARS cases were HCWs, there has been an understandable level of fear among providers. Nurses in particular seem to fear a pandemic, with 34%, (primarily young) stating that they would cease going to work in the event of a large-scale outbreak.[1,3,7]

When disaster strikes, attendance of clinical staff differs based on their confidence in the hospital's ability to provide them with personal protective equipment and guarantee their safety.[10,14] A study on Hawaiian physicians' and nurses' self-reported level of determination to work in field facilities for a large-scale natural disaster found wide variation in commitment based on the type of event. In addition, a survey done among public health nurses identified child care, transportation, and personal health issues as significant barriers to their ability to report to work during a disaster.[15,16]

During both normal situations and an outbreak like COVID-19, HCWs are our most valuable resource. Nevertheless, while millions of people are advised to stay home to reduce the spread of COVID-19, providers are required to go to clinics and hospitals, putting themselves at the highest risk of contracting it. Alongside deep concerns for their personal safety, HCWs worry about transmitting the infection to their families and loved ones. Inadequacy of a health-care workforce during a pandemic affects survival and health outcomes of infected people.[17]

Health-care systems in many countries have been forced to operate at beyond their usual capacity due to the COVID-19 outbreak. A reality, however, is that unlike hospitals, beds, and ventilators, HCWs cannot be produced in days or are easily replaceable. As such, the absence of small numbers of staff will undoubtedly affect the whole system of daily health-care provision.[18,19]

Pandemics like COVID-19 bring significant challenges to countries with a limited workforce by causing further loss of key workers to the illness itself or the need to self-isolate following contact, which can paralyze service delivery. This problem is of particular concern in areas already confronting a critical shortage of resources, including infection-protection materials.[20]

It should be noted that HCWs are frontline resources only for as long as they are willing to continue. In reality, however, none of us is certain that they will be able to continue workingshould COVID-19 reach its worst level. It was with this uncertainty in mind and the burden of COVID-19 on HCWs that this research was designed to assess predictors of unwillingness of HCWs to maintain health care–service provision during the putative climax of COVID-19 in west Oromia state, Ethiopia. The findings of this study might generate timely action to avoid subsequent chaos arising from the absence of HCWs and be of paramount importance for planning and preparing for future outbreaks.

Methods

Study Setting and Period

This study was conducted in six hospitals selected from three administrative zones in west Oromia. These are administrative divisions in Oromia and they collectively have a population of >3 million. The selected hospitals were located in the capitals of their administrative zones, and they are similar in level of services, number of beds, and other standards. The study was undertaken from April to May 2020, after COVID-19 had reached every corner of the world, but prior to hitting its peak in the study area.

Study Design

This was a multifacility quantitative study undertaken using a cross-sectional design.

Population

The source population was all HCWs working in government hospitals in western Ethiopia. In the context of this study, "HCWs" denoted all health professionals permanently employed and working in government hospitals. The study population was all HCWs sampled from eight zonal hospitals in the area. The They comprised all those with the responsibility of direct patient care, including nurses, physicians, pharmacist, laboratory professionals, and others, such as psychiatrists, paramedics, and porters.

Sample-Size Calculation and Sampling Procedures

To select subjects, multistage sampling was used. Firstly, Buno Bedele, Ilu Ababor, Kellem Wollega, West Wollega, East Wollega, and Horoguduru Wollega, which are locally considered western Oromia, were selected from the total of 21 administrative zones of Oromia state. Of these six zones, three administrative zones — West Wollega, East Wollega, and Horoguduru Wollega — were selected by simple random sampling. Then, of the three zones, two zonal hospitals (total of six hospitals) were convenience-selected. Finally, using the single population–proportion formula, we calculated a total of 633 subjects with assumptions of 50% prevalence, 95% CI, and 5% margin of error. This sample was later proportionally allocated for each of the hospitals according to their total number of staff. To recruit each study participant, systematic probability sampling using the staff-attendance sheet as a sampling frame in each of the sampled hospitals was used.

Inclusion and Exclusion Criteria

All HCWs who were working at the selected government hospitals were considered, regardless of their profession. However, as this study was aimed at degree of willingness of HCWs to remain working during a COVID-19 peak, all volunteers were excluded. All workers who were suspected of/confirmed as having COVID-19 were also excluded. This was done to reducing the risk of data collectors and study investigators becoming infected.

Research Tools and Data-Collection Techniques

Data were collected using a self-administered, pretested questionnaire based on the extended parallel process model (EPPM). This is a theoretical framework used for the analysis of predictors of medical and emergency-service workers' willingness to report to work during a disaster situation.[21] The model combines elements of the transactional stress model and self-efficacy theory[22,23] with the parallel-process model of fear and danger control.[24] According to the model, the probability of adequate self-protection behavior increases if people appraise the severity of and their own susceptibility to a health risk as high and if they also feel they would be able to implement effective preventive measures. On the contrary, perceiving a high health risk but low ability to perform effective prevention measures may lead to fear-control reactions, such as denial of risk or avoidance of risk information.[25]

The EPPM-based tool used in this study comprised 31 questions, including questions to assess respondents' sociodemographics and baseline information and questions onbeliefs and attitude perceptions related to their willingness to continue providing their services. Finally, beliefs and attitudes of HCWs regarding COVID-19 were assessed using 16 questions used in previous studies.[1,26] Two threat variables were assessed by questions aimed to test scenario-based perceived susceptibility to and perceived severity of corona virus. Similarly, efficacy variables in this model were measured using questions to assess respondents' perceptions on related efficacy based on the given case scenario. Perceptions on the four variables were measured using a scale graded 1–10 in order of agreement in which choice 10 was most important. One more question was also included to appraise HCW decision to ascertain whether they would be willing or unwilling to continue working in the given scenario. The COVID-19 scenario given to the respondents was prepared in such a way that it comprised threats and efficacy. Data were collected under strict supervision by 12 trained data collectors after the tools had been pretested and modified accordingly.

Data Quality Control

The initial tool prepared in English was translated into the local language (Afan Oromo) and translated back to English by language experts. Before conducting the main study, pretesting was carried out at one hospital not included in the study. Based on pretest findings, further modifications weren made to the questionnaire. Data collected were cheeked for completeness before data entry. Cleaning process was done by running simple frequencies after data entry to maintain data consistency.

Data Processing and Analysis

Data were initially entered into EpiData 6.4 after checking for completeness and accuracy. Then, data were exported to Stata version 14.1 for analysis. Responses given to each of the 16 attitude and belief inquiries (on the scale of 1–10) were summarized into four variables by summing the responses obtained and taking average scores. EPPM threat and efficacy perceptions were calculated by taking the products of susceptibility and severity for the threat variable and multiplying self-efficacy with the response efficacy for the efficacy variable. Low versus high classification of these two main variables (threat and efficacy) was done using the median value of each product.

Finally, combinations of these classifications were created so as to be interpretable according to the concept of the model. These combinations were low threat and low efficacy, low threat and high efficacy, high threat and low efficacy, and high threat and high efficacy. Binary logistic regression was performed to discover associations between the outcome variable (unwillingness) and independent variables. Variables selected for multivariate analysis were those with $P<0.25$ on univariate analysis. ORs and 95% CIs were used as measures of association. Possible associations between the outcome variable and EPPM variables were assessed with cross-tabulation and Pearson's χ^2.

Results

Sociodemographic and Baseline Characteristics of Study Participants

This study involved a total of 633 HCWs. Of the total respondents, 396 (62.6%) were aged 25–35 years. Nurses accounted for nearly half (49.4%) the total respondents, followed by midwives (13.4%). In sum, 209 (33.0%) reported that they had other sources of income in addition to their current work. A majority (465, 73.5%) had at least one dependent living with them (Table 1).

Regarding COVID-19 baseline information, 213 (33.6%) had no up-to-date information on COVID-19, and 399 (63.0%) had not had any experience in handling such epidemics. The greatest proportions (48.7%) of respondents perceived that the level of their hospital's preparation in containing COVID-19 was low. Despite personal safety concerns, a majority (77.7%) of the HCWs were graded to be high level, while 297 (46.9%) perceived that their hospital's efforts in ensuring workplace safety was low.

Unwillingness of HCWs to Continue Working During Potential Climax of COVID-19

The central aim of this study was to investigate how well HCWs were coping with the pressures posed by COVID-19 and whether they were willing to continue working during the potential climax of the pandemic. While a substantial proportion (205, 32.4%) said that they were unwilling, 128 (20.2%) were unsure as to what they would decide. The two main reasons suggested for unwillingness were fear of acquiring the infection (49%) and fear of spreading the infection to family (51%). HCWs who were unwilling to continue their job in the given situation were asked if they would change their decision were significant incentives to be offered: 24 (11.4%)said that they would change their change their mind and 38 (18.0%) were not sure. Unwilling providers were asked at what time they were going to quit working, and 337 (53.2%) said that they would cease working after trying their level best. A total of 176 (27.9%) reported that they would stop going to their hospital before they were at greatest risk, while 118 (18.7%) of them did not think they were able to judge the time to do so.

On the other hand, HCWs who indicated willingness to keep helping COVID-19 patients during the peak of the pandemic in their areas were asked for their reasons. Fear of job loss (49%), keeping their professional covenant (55.8%), and accountability toward their community (28.1%) were the main reasons given. Apart from their personal perspective (willing/unwilling), respondents were asked to grade their trust that colleagues were committed to continue their job during the climax of COVID-19 pandemic. Of 633 respondents who participated in the study, 245 (38.7%) had low trust and 32 (5.1%) had no trust at all in the commitment of their colleagues. In relation to the large risks during outbreaks like that of COVID-19, the respondents were asked if they regretted becoming health professionals, and 93 (14.7%) responded that they regretted working in hospitals.

Predictors of HCW Unwillingness to Continue Working During Potential Climax of COVID-19 Crisis

The other aim of this study was to investigate predictors of HCW unwillingness to continue working, including treating COVID-19 patients, in the midst of the climax of the pandemic. Univariate and multivariate statistical analyses were performed to identify variables predicting unwillingness of HCWs to continue providing their services to COVID-19 patients.

Male sex (AOR 11.4, 95% CI 8.32–12.6), younger age (AOR 25.3, 95% CI 4.61–40.67), and temporary employment status (AOR 14, 95% CI 4.8–40.8) were among the sociodemographic variables found to have strong associations with unwillingness (Table 2).

Longer work experience (AOR 20.3, 95% CI 10.21–39.3), lack of previous experience handling similar pandemics (AOR 5.15, 95% CI 1.1–255), perceived lack of training (AOR 18.8, 95% CI 7.55–47.4), low perceived level of hospital effort in ensuring safety (AOR 22.1, 95% CI 29.2–86.2), higher level of personal safety concern (AOR 37.1, 95% CI 16–86) and

Table 1 Respondent sociodemographics

Variables	Category	n	%
Sex	Male	313	49.4
	Female	320	50.6
Age	<25 years	90	14.2
	25–35 years	396	62.6
	36–45 years	118	18.6
	>45	29	4.6
Marital status	Have marriage	488	77.1
	Have no marriage	145	22.9
Religion	Christian	511	80.8
	Muslim	97	15.3
	Wakefata	25	3.9
Work experience	<5 years	234	37.0
	6–10 years	238	37.6
	11–15 years	113	17.9
	16–20 years	48	7.6
Profession	Nurses	313	49.4
	Midwives	85	13.4
	Physicians	57	9.0
	Pharmacists	72	11.4
	Medical laboratory Professionals	58	9.2
	Others*	48	7.6
Other source(s) of income	Yes	209	33.0
	No	424	67.0
Dependents	Yes	465	73.5
	No	168	26.5
Number of dependents	χ3	235	50.8
	3–6	204	44.1
	>7	24	5.2
Preparedness of family in absence of the provider	Yes	69	10.9
	No	564	89.1
Experience of handling similar epidemic	Yes	234	37.0
	No	399	63.0

Note: *Represents professionals like emergency medical technicians and anesthetists.

low perceived level of hospital preparedness (AOR 2.05, 95% CI 0.808–5.21) were predictors of unwillingness for HCWs to continue in the fight against COVID-19 (Table 3).

The EPPM individual measure for threat and efficacy perception showed that high susceptibility to threat ($P \leq 0.010$) and low response efficacy ($P \leq 0.008$) were associated with higher unwillingness. Of the classified EPPM variables, high threat perception ($P \leq 0.001$) and low efficacy perception ($P \leq 0.040$) were found to predict unwillingness (Table 4).

Discussion

HCWs are a critical component of the health system in both normal conditions and pandemic situations. Ensuring the willingness of HCWs to respond to a pandemic and keep serving their community, particularly in a resource-limited setting, is a critical component of hospital readiness and sustainability in emergencies. A worker absence when needed most is one of the most significant challenges for hospitals during the peak of pandemics like that of COVID-19. This study assessed HCWs' willingness to continue working during the potential climax of

Table 2 Associations between HCW unwillingness to maintain serving COVID-19 patients and selected sociodemographic variables

Variables	Category	Willingness (n=633)		Univariate analysis			Multivariate analysis		
		Yes	No	COR	CI (95%)	*P-value*	AOR	CI (95%)	*P-value*
Sex	Male	414 (65.4%)	219 (34.6%)	1.78	0.9, 3.4	0.07	11.4	8.32–12.6	0.0013*
	Female	332 (52.4%)	301 (47.6%)	R(1)	R(1)	R(1)	R(1)	R(1)	R(1)
Age	<25 years	485 (76.6%)	148 (23.4%)	5.89	3–14.81	0.18	25.3	4.61–40.67	0*
	25–35 years	354 (56.0%)	279 (44.0%)	5.2	4.3–9.94	0.07	6.8	5–10.95	0.012*
	36–45 years	418 (66.1%)	215 (33.9%)	1.78	0.91–3.64	0.071	1.7	0.832–2.62	0.183
	>45 years	272 (42.9%)	361 (42.9%)	R(1)	R(1)	R(1)	R(1)	R(1)	R(1)
Marital status	Have a marriage	363 (57.3%)	270 (42.7%)	086	0.07–2.06	0.051	0.65	0.139–3.1	0.57
	Have not a marriage	417 (65.9%)	216 (34.1%)	R(1)	R(1)	R(1)	R(1)	R(1)	R(1)
Type of duty	Direct patient Care	344 (54.4%)	289 (45.6%)	0.590	0.25–1.37	0.227	0.99	0.478–2.054	0.981
	Indirect Patient Care	541 (85.4%)	92 (14.6%)	R(1)	R(1)	R(1)	R(1)	R(1)	R(1)
Managerial responsibility as additional role	Yes	309 (48.8%)	324 (51.2%)	R(1)	R(1)	R(1)	R(1)	R(1)	R(1)
	No	382 (60.3%)	251 (39.7%)	0.324	0.09–1.16	0.083	2.8	0.83–4.01	0.05
Employment status	Permanent	342 (54.0%)	291 (46.0%)	R(1)	R(1)	R(1)	R(1)	R(1)	R(1)
	Temporary	520 (82.1%)	113 (17.9%)	0.142	0.045–0.44	0.001	14	4.8–40.8	0*
Other source(s)	Yes	560 (88.5%)	73 (11.5%)	4.07	1.6–10	0.050	40.8	19.3–86.4	0.019*
	No	293 (46.3%)	340 (53.7%)	R(1)	R(1)	R(1)	R(1)	R(1)	R(1)
Work experience	<5 years	499 (78.8%)	134 (21.2%)	R(1)	R(1)	R(1)	R(1)	R(1)	R(1)
	6–10 years	315 (49.7%)	318 (50.3%)	0.361	0.18–1.212	0.099	0.35	0.11–1.117	0.076
	11–15 years	317 (50.0%)	316 (50.0%)	1.34	0.744–2.41	0.24	1.71	0.84–2.576	0.017*
	≥16 years	175 (27.7%)	458 (72.3%)	2.57	1.23–5.28	0.01	20.3	10.21–39.3	0.043*
Dependents	Yes	314 (49.6%)	319 (50.4%)	5.90	2.51–13.87	0.22	0.57	0.21–1.32	0.18
	No	518 (81.8%)	115 (18.2%)	R(1)	R(1)	R(1)	R(1)	R(1)	R(1)

Note: *$P<0.05$.

COVID-19. Key results of this study are compared with and against existing and up-to-date literature and briefly presented. Our findings underpin the need for planning to tackle the challenge of unexpected absenteeism beyond focusing on material preparation alone in the context of health-care organization response-capacity enhancement.

One central aim of this study was to investigate whether HCWs in the study area would remain serving their community or become unwilling to do their job if their health-care system were overwhelmed by COVID-19 outbreak to the extent their the crisis affected their safety. While a significant proportion, (205, 32.4%) said that they were unwilling to go to work in that situation, 128 (20.2%) were not sure as to what they would do. This is a similar finding to that reported in a comparable study conducted in Canada, which found about 34% of HCWs hesitated about continuing work during the climax of the SARS outbreak.[1,19] However, the 32.4% unwillingness in this study is much higher than another similar study done to assess local public health workers' willingness to respond to an influenza pandemic through application of the EPPM, which found that 16% were not willing to respond to a flu-pandemic emergency, regardless of its severity.[21] The discrepancy in findings between the two studies might be related to variation in the timing of data collection: in the midst of the pandemic for this study and postpandemic for the latter study.

It is acknowledged that our HCWs often have competing interests and obligations to family members that can influence their decision-making at work. During the current pandemic,

Table 3 Association of HCW's unwillingness to maintain serving COVID-19 patients with attitudes and belief variables

Attitudes and beliefs (n=250)	Response	Unwillingness	Univariate analysis			Multivariate analysis		
			COR	CI (95%)	*P-value*	AOR	CI (95%)	*P-value*
Experience of handling epidemics	Yes No	46 (18.3%) 204 (81.7%)	R(1) 2.59	R(1) 0.9–7	R(1) 0.08	R(1) 5.15	R(1) 1.1–255	R(1) 0*
Level of personal safety concern	High Moderate Low	112 (44.8%) 75 (30%) 63 (25.2%)	3.35 24.3 R(1)	1.7–9.2 7–76 R(1)	0.04 0.01 R(1)	37.1 22.1 R(1)	16–86 9.8–51.0 R(1)	0.021* 0* R(1)
Perceived ability to handle COVID-19	Yes No	121 (48.4%) 129 (51.6%)	R(1) 1.3	R(1) 0.57–3.69	R(1) 0.15	R(1) 7.06	R(1) 0.346–1.41	R(1) 0.39
Receiving training related to COVID-19	Yes No	105 (41.9%) 145 (58.1%)	R(1) 4.4	R(1) 1.2–13.65	R(1) 0.175	R(1) 18.8	R(1) 7.55–47.4	R(1) 0.01*
Perceived level of hospital preparedness	High Medium Low	79 (31.6%) 111 (44.3%) 132 (52.7%)	R(1) 5.56 2.62	R(1) 1.7–17.52 1.06–6.44	R(1) 0.003 0.037	R(1) 2.05 12.9	R(1) 0.808–5.21 6.5–25.6	R(1) 0.131 0.005*
Perceived level of hospital effort in ensuring one's safety	High Medium Low	230 (9.2%) 47 (18.8%) 180 (72.0%)	R(1) 0.551 0.53	R(1) 0.19–1.38 0.20–2.8	R(1) 0.205 0.060	R(1) 0.45 22.1	R(1) 0.208–0.988 29.2–86.2	R(1) 0.47 0.012*
Trust in colleagues to stay committed up to death	High Medium Low None	58 (23.1%) 69 (27.6%) 80 (32%) 43 (17.3%)	R(1) 0.354 2.03 2.03	R(1) 0.134–0.134 1.06–3.03 1–3.903	R(1) 0.077 0.015 0.043	R(1) 0.35 1.88 1.79	R(1) 0.32–1.31 0.755–4.704 1.04–3.08	R(1) 0.07 0.175 0.34

Note: *$P<0.05$.

Table 4 Cross-tabulation of EPPM variables with unwillingness of HCW to maintain serving COVID-19 patients

Variables	Categories	Willingness		Total	Pearson's χ^2	*P-value*
		No	Yes			
Individual variables	Low threat (susceptibility)	63 (48.46%)	67 (51.54%)	130	0.074	0.784
	High threat (susceptibility)	266 (52.89%)	237 (47.11%)	503	12.18	0.010*
	Low threat (severity)	112 (49.12%)	116 (50.88%)	228	0.42	0.513
	High threat (severity)	188 (46.41%)	217 (53.59%)	405	3.02	0.370
	Low efficacy (response)	152 (57.8%)	111 (42.2%)	263	4.85	0.008*
	High efficacy (response)	189 (50.08%)	181 (48.92%)	370	1.393	0.910
	Low efficacy (self)	158 (48.46%)	168 (51.54%)	326	0.31	0.577
	High efficacy (self)	142 (46.25%)	165 (53.75%)	307	2.04	0.990
Variable classification	Low threat	116 (40%)	174 (60%)	290	0.725	0.063
	High threat	184 (54.43%)	154 (45.57%)	338	11.73	0.001*
	Low efficacy	161 (55.32%)	130 (44.68%)	291	9.072	0.040*
	High efficacy	139 (40.64%)	203 (59.36%)	342	0.852	0.090
Combined	Low threat–low efficacy	190 (54.28%)	160 (45.72%)	350	4.48	0.034*
	Low threat–high efficacy	29 (55.76%)	23 (44.24%)	52	0.601	0.570
	High threat–low efficacy	13 (56.52%)	10 (43.48%)	23	0.619	0.310
	High threat–high efficacy	161 (60.9%)	106 (39.71%)	267	5.41	0.024*

Note: *$P<0.05$.
Abbreviation: EPPM, extended parallel-process model.

HCWs have expressed fear of spreading the virus to their families, friends, or colleagues. In the present study, the two main reasons suggested for unwillingness were fear of acquiring the infection (49%) and fear of spreading the infection to family (51%), a finding similar to comparable studies done in China and elsewhere.[17,27]

As to what variables predicted HCWs' unwillingness in this study setting, we found that being younger was 25-fold more likely to yield a response of unwilling, indicating that the health-care system would short on staff. This isconsistent with findings from a survey of HCWs at university hospitals in Germany, where a majority of younger respondents indicated that they would not come to work during the climax of an influenza pandemic.[28] In addition, we found those respondents who lacked previous experience in handling similar pandemics were five times as unwilling to continue working in the given scenario, a finding consistent with previous studies.[19,29,30]

People's willingness to work is context-specific and corresponds to the nature, magnitude, and threats posed by particular public health disasters.[31] This study was focused ondicovering if the EPPM variables that have predicted sources of unwillingness in different settings (outside Africa) could point out to why HCWs might hesitate to continue their job during a severe pandemic. Our findings showed that high susceptibility threat ($P \leq 0.010$) and low response efficacy ($P \leq 0.008$) were associated with a higher possibility of unwillingness. Similarly, higher threat perceptions in this study ($P \leq 0.001$) consistent with higher threat (OR 1.23 (95% CI 1.02–1.49) and lower efficacy perceptions ($P \leq 0.040$), inconsistent with higher perceived efficacy. In comparison, one United States based study found a higher chance of unwillingness.[26]

In summary, much of the literature and disaster studies suggest that we need fair and effective strategies to encourage HCWs to work during a pandemic and serve the common good.[21,26,30,32,33] In this context, our present study has revealed that the potential unwillingness of HCWs was bigger and the problem could be worrisome in a country like Ethiopia, where resources are unacceptably limited and the health-care system poor.

Strengths and Limitations

In addition to the timeliness of the focus of this research topic, studying the predictors of HCWs' unwillingness to report for pandemics like COVID-19 through the application of the EPPM is perhaps the first of its kind in the context of low-income countries, where staff shortages have already been evidenced and the degree of the risks of pandemics, higher due to a critical shortage of resources. A limitation would be that the sample size of this study was insufficient and covered only a single study area, which could undermine its external validity.

Conclusion

It can be concluded from this study that the proportion of HCWs who were unwilling to continue their job during COVID-19 is more than sufficient to jeopardy in the fight against the pandemic. As to the question of whether HCWs must risk their lives to treat COVID-19 patients might not have one uniform answer, working on the predictors of potential unwillingness is of paramount importance.

Abbreviations

EPPM, extended parallel-processing model; HCW, health-care worker.

Ethics Approval and Consent to Participate

This study was approved by the Wollega University research ethics committee (Ref–WU: 117,969–Re-42). Formal support letters were written to the selected hospitals and permisions were obtained. We also confirm that participants were informed of the purpose of this study before consent and declare that our study complied with the Declaration of Helsinki.

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Disclosure

The authors declare no conflicts of interest for this work.

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