Willingness of University Nursing Students to Volunteer During a Pandemic

Olive Yonge, Rhonda J. Rosychuk, Tracey M. Bailey, Rob Lake, and Thomas J. Marrie

ABSTRACT  Objective: The global threat of an influenza pandemic continues to grow and thus universities have begun emergency preparedness planning. This study examined stakeholder’s knowledge, risk perception, and willingness to volunteer. Design and Sample: The design of this study is a cross-sectional survey. Questionnaires were sent to 1,512 nursing students and were returned by 484, yielding a response rate of 32% for this subgroup. Nursing students may be a much-needed human resource in the event of an influenza pandemic. Measures: The measurement tool was a Web-based questionnaire regarding pandemic influenza designed by a subgroup of researchers on the Public Health Response Committee. Results: Most nursing students (67.9%) said they were likely to volunteer in the event of a pandemic if they were able to do so. An even higher number (77.4%) said they would volunteer if provided protective garments. Overall, 70.7% of students supported the proposition that nursing students have a professional obligation to volunteer during a pandemic. Nursing students indicated that they have had a wealth of volunteer experience in the past and they would apply this service ethic to a pandemic situation. Conclusions: Emergency preparedness competencies should be integrated into existing nursing curricula and other health science programs. University administrations need to engage in planning to create protocol for recruitment, practice, and protection of volunteers.

Key words: avian influenza, emergency response, nursing student, pandemic preparedness.

Background

The threat of avian influenza has become widely recognized and many governments and institutions have begun to institute preparedness plans in anticipation of the event of a pandemic. Historically, pandemic influenza occurs three to four times a century and often leave severe illness, death, and economic and social disruption in their wake. In 1918, the Spanish Influenza killed an estimated 30,000–50,000 people in Canada alone and 20–50 million people worldwide (Public Health Agency of Canada, 2006). Annually, during the winter season, seasonal influenza affects 10–15% of the population, largely targeting the elderly, very young, and immunocompromised. Should a severe influenza A epidemic occur, 30–50% of the population may be affected, resulting in 6,000–8,000 deaths and 30,000–40,000 hospitalizations (Public Health Agency of Canada, 2006). A huge proportion

Olive Yonge, Ph.D., R.Pysch., R.N, is Professor & Vice-Provost, Academics, University of Alberta, Edmonton, Alberta, Canada. Rhonda J. Rosychuk, B.Sc. (Hon), M.Sc., Ph.D., is Associate Professor, Department of Pediatrics, University of Alberta, Edmonton, Alberta, Canada. Tracey M. Bailey, B.A., L.L.B., is Executive Director, Health Law Institute, University of Alberta, Edmonton, Alberta, Canada. Rob Lake, B.Sc. (Hon), M.Sc., Computing Science, is an Information Technology Planning and Forecasting Officer, University of Alberta, Edmonton, Alberta, Canada. Thomas J. Marrie, M.D., is Dean, Faculty of Medicine & Dentistry, University of Alberta, Edmonton, Alberta, Canada. Correspondence to: Olive Yonge, 3rd Floor Clinical Sciences Building, University of Alberta, Edmonton, AB, Canada T6G 2G3. E-mail: olive.yonge@ualberta.ca
of the population may remain asymptomatic, making infection control extremely difficult.

Beyond the threat of high rates of morbidity and mortality, absenteeism poses the greatest threat to the continued delivery of essential services, particularly in the health care sector. The first point addressed in the Code of Ethics of the International Council of Nurses is that nurses’ primary responsibility is to those who require nursing care (2007). More specifically, the Canadian Nurses Association (CNA) addresses nursing duties during a pandemic, stating “during a natural or human-made disaster, including a communicable disease outbreak, nurses have a duty to provide care using appropriate safety precautions” (CNA, 2008, p. 46). Despite this professional obligation, the CNA Code of Ethics recognizes that, under some circumstances, it may be acceptable for a nurse to refuse to provide care and it sets out criteria for consideration when contemplating one’s duty to care.

To help bolster front-line nursing human resources, nursing students will be greatly needed in the event of a pandemic influenza. Additionally, the greater social environment may also have expectations for nursing students’ moral/ethical/professional duties surrounding volunteering in the event of a pandemic (Rosychuk et al., 2008). As part of pandemic planning efforts at a large, western Canadian university, staff and students were surveyed regarding their willingness to volunteer in the event of a pandemic. The objectives of the research were to determine what the university’s stakeholders know about pandemic influenza; the risk-perception trends that exist among stakeholders; stakeholders’ willingness to volunteer in the event of a pandemic influenza; and which strategies for allocation of scarce resources are most popular among stakeholders. The researchers hypothesized that stakeholders would possess a low level of factual knowledge regarding Avian flu and pandemic influenza, that the preferred resource allocation strategy would prioritize vulnerable groups, and that a small percentage would be willing to volunteer during an outbreak.

A significant subgroup of survey respondents was comprised of nursing students. They are a unique subgroup of the university population as they have an invaluable skill set, will be providers of front-line care, and have been socialized as professionals, which would result in the likelihood of their participation in the event of a pandemic. Their responses were analyzed separately. This paper will focus on nursing students’ willingness to volunteer and their perceptions of professional obligation.

A review of the extant literature was conducted to determine what is known about nursing students, a potential human resource in the event of a pandemic influenza. Research on the SARS epidemic of 2003–2004 has provided a preliminary understanding of some of the challenges posed by a potential avian influenza pandemic. The threat of absenteeism in the health care sector was so great during this epidemic in Taiwan that the Mayor of Tapei City at one point announced that if health care workers left their jobs, it would be a comparable offence to soldiers deserting the battlefield against orders (Shiao, Koh, Lo, Lim, & Guo, 2007).

In a Taiwanese study by Shiao et al. (2007), a significant minority of nurses believed that they should not be looking after SARS patients (12.2%) or were looking for another job/considering resigning due to the perceived personal risk (25.9%). Nurses who considered leaving their jobs did so for reasons of perceived fatality more than belief in the effectiveness of personal protective equipment (Shiao et al., 2007). In contrast, a study by Tzeng (2004) discovered “nurses’ attitudes towards general infection control measures and towards the need for quarantine after providing care for patients with SARS indicated their willingness to provide care for those patients” (p. 285).

A Canadian study of community nurses’ experiences of the SARS epidemic found, however, that despite the perceived risk, nurses continued to report to work (Bergeron, Cameron, Armstrong-Stassen, & Pare, 2006). Although the provision of personal protective equipment was inconsistent, professional recognition for sacrifices made was lacking, fear of contagion for both self and family and sense of vulnerability prevailed, and the psychological effects of the unknown nature of SARS were unsettling, nurses showed a continued commitment to nursing the public (Bergeron et al., 2006). Thus, the ethical dilemma of professional obligation versus the right to refuse to work under unsafe conditions is one that must be grappled with in order to avoid disruption of essential services (Shiao et al., 2007).

Tzeng and Yin (2006) surveyed a sample of nursing students enrolled in a post-RN night class about their fears related to a potential avian influenza pandemic and their willingness to care for patients. Fifty-nine percent of student nurses did not think their hospitals
would have sufficient infection control measures in the event of a pandemic. Forty-one percent were personally fearful and 52% perceived their families to be fearful based on what was reported in the news media. Yet, about half indicated that they remained willing to care for patients infected with avian influenza (57%) (Tzeng & Yin, 2006).

Research has extended the question of professional obligation of nurses and student nurses to other disasters, including earthquakes and biological, chemical, and nuclear terrorism. Mitani, Kuboyama, and Shirakawa (2003) found that 90% of Japanese nurses surveyed would be willing to join in future domestic disaster relief without any conditions (6.3%) or with some conditions (84.7%). Their willingness to respond related to conflicts with familial duties and permission/direction from their supervisor and approval from colleagues (Mitani et al., 2003). The conditions associated with willingness to volunteer were identified as protection both personally and professionally in a study by Young and Persell (2004). Nursing students reported that they would not work if provisions were not made to protect their families (90%). Although surprised at the fearfulness of the students and the level of misinformation, the researchers suggested that fears must be openly and directly addressed to strengthen commitment toward professional obligation and to prepare a potential body of front-line volunteers in the case of an emergency.

In summary, a pandemic poses a significant threat of absenteeism among front-line health care workers. This is largely due to the perceived risk for self and family. The literature shows that nurses and nursing students have a low degree of confidence in their employers’ and institutions’ abilities to implement adequate infection control measures. Most nurses, however, would be willing to nurse during a pandemic, provided that protective measures were in place.

Research questions
Given this summary of the current literature, the research questions for this study were:

1. What is the level of knowledge and concern among the University’s students and faculty regarding the threat of pandemic influenza?
2. How would they prioritize health resources?
3. Would they be willing to work or volunteer with the local health region, or other institutions, during an outbreak of pandemic influenza?

Methods
Design
The design for this study was a cross-sectional survey. The Provost of the University charged a Public Health Response Committee with the task of formulating a public health plan in the case of a pandemic influenza. The university had an emergency plan for the university but no plan for a public health event. Given that the university has a number of international students and staff who travel regularly, the Committee felt that the university was at a significant risk for an infection. A Web-based survey was chosen because of time, cost, and access. The entire student population could be contacted via their university-issued e-mail accounts. The Committee decided to survey the entire student population in order to obtain a significant sample size. The ultimate goal was to use the findings in decision making for the execution of the public health plan.

Measures
A subgroup of researchers developed a Web-based questionnaire regarding pandemic influenza. The questionnaire consisted of 42 questions (41+1 sub-question 21a): 13 requested demographic information and current health status, 2 dealt with source and reliability of health care information, 4 focused on risk perception (likelihood of developing and dying from the illness) of pandemic influenza, 5 concerned general knowledge about pandemic influenza, 11 related to volunteering during pandemic influenza and the consequences of not volunteering, 3 dealt with the allocation of scarce health care resources, and 4 elicited opinions regarding university closure during a pandemic. Responses were generally either yes/no or a 5-point Likert scale (e.g., “very unlikely” to “very likely”). Two questions allowed for free text answers.

Before participation was requested from the entire university, a pilot was initiated with the 27 members of the Public Health Planning Committee. Based on their feedback, the questionnaire was modified to include changing the order of one question and changing the introduction. Once the final version was deemed satisfactory, the questionnaire was administered via the Web to 40,088 student and staff e-mails in September 2006, which yielded 13% (5,225) of these e-mail addresses providing a response.

Sampling
The questionnaires for the nursing students had a letter of introduction from the Associate Dean of the
Faculty of Nursing. A reminder was exclusively sent to health science students on October 2, 2006. This article only reports the responses from the nursing students.

**Analytic strategy**

Summary statistics are presented as percentages of the nursing student sample who responded to a given question. The 5-point scale responses were dichotomized (i.e., categories 4 and 5 combined). Respondents with missing values were excluded from data summaries and statistical tests. The S-PLUS statistical package was used for analysis (Insightful Corp. S-PLUS 7.0, 2005).

**Results**

There were 461 (95.2%) female respondents and 23 (4.8%) male respondents. Most (94.0%) were undergraduates, with 6% being postgraduate students. Most respondents were evenly divided between 3rd- and 4th-year students (63.4%) while 20.4% of the respondents were in their 1st year and 15.2% were in their 2nd year. One percent of respondents were in their 5th year or more of studies. Almost three-quarters of the respondents were single and 11% of the respondents (single or in a relationship) reported having children. A large majority (91.9%) had permanent residence in-province, 7.7% of students were from another province, and 1% were international students. Almost half of the respondents (48.8%) reported living off-campus with family and another 28% reported living off-campus with a roommate(s). About 15% of the students lived alone off campus and the remainder (8%) lived in residence either alone or with a roommate(s). Most students described their own current health status as either excellent (41.9%) or good (57.2%). Less than 1% (4 respondents) described their health status as poor.

**Attitudes toward volunteering.** Students reported past experience of volunteering in the areas of sports and recreation (38.0%), hospital or health care settings (45.9%), schools (51.0%), religious institutions (32.0%), social services (29.8%), or other opportunities (22.5%). With regard to attitudes toward volunteering in the event of an influenza pandemic, most students (67.9%) said they were likely to volunteer if they were healthy and able to do so. An even higher number (77.4%) said they would volunteer if provided protective garments. A smaller majority (55.6%) indicated that they would volunteer if compensated, while just fewer than 50% said they would volunteer if conscripted by the government.

**Settings for volunteer work.** Between 60% and 70% of the students indicated that they would volunteer in a variety of roles in hospital, including helping to feed patients (67.2%), undertaking clerical work (60.8%), providing refreshments to staff (64.8%), or wherever they were needed (68.9%). Similar numbers responded that they would volunteer in the community staffing phone lines (65.1%), checking on neighbors (60.5%), or getting groceries for the ill (65.2%). They were less likely to agree that they would provide transportation services (41.8%). Among the qualitative responses, 3 respondents felt students were too ill-prepared to fill the role of volunteer nurse. On the other hand, 2 respondents felt their skills would be wasted doing “clerical” or other menial volunteer work.

**Compensation for risk.** Attitudes toward compensating volunteers who may be at risk of infection were mixed. Most respondents disagreed that volunteers should be given monetary compensation (63.7%) and a higher number disagreed that compensation should be paid to volunteers only if they become ill (84%) or that families of volunteers who die during duty should be compensated (80.3%). A majority of respondents (60.8%) agreed that volunteers should be given first access to scarce health resources/vaccines. Overall, 84.5% of the volunteers disagreed with the statement that volunteers should not be compensated. Two respondents indicated in the comments section that people will and should volunteer to help out society and that compensation simply underestimates an individual’s altruism. One respondent felt that nurses, doctors, and other front-line workers “should be compensated richly.”

**Recruitment of volunteers.** In the event of a health care worker shortage, 76.7% of the respondents agreed that health care students should be encouraged to volunteer, 12.1% were opposed, and 11.2% did not know. Two respondents suggested volunteering as a form of education and that it could count toward a practicum. Another 2 respondents felt students should receive pandemic preparedness education in their curriculum. Two respondents supported the idea...
of recruiting volunteer student nurses under the condition that they would receive adequate personal protection. Lastly, one respondent indicated that in the event of volunteering, a student's education, financial position, or academic success (e.g., grades) should not suffer as a consequence. On the question of whether retired health care workers should be encouraged to volunteer, 55.7% of the respondents agreed, 28.9% opposed, and 15.4% did not know.

**Moral and professional obligations.** 70.7% of students supported the proposition that health care students have a moral/ethical/professional obligation to volunteer during a pandemic influenza, 21.7% opposed, and 7.6% did not know. Opinion was divided on whether the government would be justified in requiring people to work during a pandemic: 41.8% agreed the government would be justified, 36.3% were opposed, and 21.9% said they did not know. Six respondents indicated in the qualitative responses that they very strongly felt that the government had no right to conscript workers as this was “not a police state.” On the other hand, one respondent stated a reluctance to work based on the perception of risk, and yet would work if required by the government.

**The right to refuse.** A large number (82.8%) of students disagreed that students should be penalized if they refused to provide services as required by the government, while a small proportion of students (6.4%) agreed with penalties and 10.7% did not know. Opinion was somewhat more mixed on the question of whether health care academic staff should be penalized if they refused to provide services as required by the government, but a strong majority (67.2%) indicated that staff should not be penalized, while 18.6% said they should and 14.2% indicated that they did not know. About 60% of students did not agree with any of the proposed possible penalties that could be applied by the government, while 22.9% chose a fine, 5.6% chose termination from work or school, 0.8% chose jail, and 13.8% chose the “other” option (not specified). One respondent among the qualitative comments asserted that “one life is not more important than another” and thus the right to refuse to work in unsafe conditions must be upheld.

**Discussion**

Nursing students indicated they have had a wealth of volunteer experience in the past and that they would apply this service ethic to a pandemic situation. Karniol, Grosz, and Schorr (2003) found that women were significantly more likely to volunteer than men, which suggested that the ethic of care associated with being female was translated into behavioral tendencies. As the nursing student sample was 95.2% female, it is possible that these service ethics can be attributed to a gendered socialization and the type of person who chooses to enter the nursing profession. Interestingly, although women had a higher response rate than men (15.9% to 8.9%), the results of the campus-wide survey indicated that men were as likely to indicate willingness to volunteer as women (47.7% vs. 49.8%) (Rosychuk et al., 2008).

Students were much more likely to indicate a willingness to volunteer given the condition that they would be supplied with personal protective equipment (Bergeron et al., 2006; Shiao et al., 2007; Tzeng, 2004; Tzeng & Yin, 2006; Young & Persell, 2004). By extension, protecting themselves from contracting the virus would also protect their families and close contacts. Students were opposed to the idea of monetary compensation for volunteer work; however, they agreed that volunteer nurses should be compensated in some format. This sentiment was, again, closely linked to the perceived need for personal protection from infection and compensation took the form of priority access to vaccines and equipment. Bergeron et al. (2006) found that nurses lacked personal protective equipment, but also professional recognition for their sacrifices, which affected commitment to their role.

About two thirds of students indicated they would be willing to volunteer in a variety of supporting roles to assist front-line workers. Rosychuk et al. (2008) found that this willingness, as part of a greater moral/ethical/professional duty, is an expectation the wider university community has of health science students. They suggest that an important aspect of pandemic planning is making such societal expectations clear (Rosychuk et al., 2008); however, there appears to be congruence between social expectations and nursing students’ willingness to volunteer.

Students, however, may be ill-prepared to fill front-line nursing roles. Weiner (2006) raises the point that educating volunteers brings its own challenges and that education “at the scene” is not nearly as effective as preparing a cohort of volunteers in advance. The literature suggests that education, particularly on infection control measures, has been very
useful in decreasing fears associated with influenza outbreaks and the resulting absenteeism (Mitani et al., 2003; Tzeng, 2004; Young & Persell, 2004).

Incorporating emergency response teaching into the nursing curriculum could be a proactive method of preparing student nurses for a more active role in the event of a pandemic. Weiner (2006) describes a variety of educational resources currently available, including face-to-face classes, Web-based modules, electronic journals, and complete prepackaged materials, that would facilitate integration of emergency-preparedness into nursing curricula. Of particular note are the 64 core competencies developed by the International Nursing Coalition for Mass Casualty Education (INCMCE, 2003). Although the INCMCE recognizes that it is not practical that every nurse specializes in the area of disaster nursing, they assert that every nurse, however, must have sufficient knowledge and skill to recognize the potential for a [mass casualty incident], identify when such an event may have occurred, know how to protect oneself, know how to provide immediate care for those individuals involved, recognize their own role and limitations, and know where to seek additional information and resources. (INCMCE, 2003)

Weiner (2006) sees the challenge as one of integrating emergency preparedness into existing nursing curricula, not merely adding content to an already full program. In fact, it is likely that many of these competencies are already covered throughout the baccalaureate nursing program and may simply need to be identified as such.

Although the results presented in this article pertain to nursing students, it is likely that the potential for a volunteer workforce in the event of a pandemic exists across health science faculties. To properly utilize this potential, however, comprehensive planning must take place at the level of administration. The second basic competency identified by the INCMCE is “participat[ing] in a multidisciplinary, coordinated response” (Weiner, 2006). Because multidisciplinary collaboration will need to be extremely effective and well coordinated during an emergency, it is relevant to suggest that education relating to emergency preparedness should be extended to all health science programs or competencies developed in interdisciplinary environments.

The researchers cannot generalize this research because the subjects are not representative of other nursing students in other universities or in other countries. Thus, it is important that similar research is carried out at several sites in multiple countries. A second limitation is the low response rate and the predominance of female respondents in the nursing subgroup. That being said, this study is the largest to date to examine the knowledge and attitudes of nursing students regarding various aspects of pandemic influenza. It would be beneficial to pandemic planning if future research could compare the results of nursing student responses with those of medical students, public health students, other health professions, and other students in programs oriented to social services.

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