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Nurses' willingness to take care of people living with human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) – does a teaching intervention make a difference?

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Summary

The aim of this study is to describe the impact of an education intervention programme on nurses' willingness to care for HIV-positive people in Lithuania.

Methods: The study utilizes a randomized controlled trial design (RCT). The total sample comprises 185 nurses working in medical, surgical and gynaecological units, and primary health care centres from the same hospital areas in three Lithuanian hospitals. The data were analyzed using SPSS 12.0 and descriptive statistics.

Findings: Our educational intervention did not have an impact on the nurses' willingness to take care of people living with HIV (PLHIV), as their level of willingness was high already before the education intervention.

Conclusions: Further research on this issue is needed to try to understand the forces acting on our nursing staff in order to ensure appropriate care for PLHIV.

Introduction

Diseases such as acquired immune deficiency syndrome (AIDS), severe acute respiratory syndrome (SARS) and the Avian influenza seem to raise new challenges for society as well as for nursing research. These new diseases certainly indicate that diseases nowadays are global phenomena and that new problems may be transported around the world rapidly (Hallberg, 2006).

Since the first cases were recorded in 1981, AIDS and its causative agent, HIV (human immunodeficiency virus), have taken an enormous toll around the world. According to the World Health Organization (2009) every day more than 6800 people become infected with HIV and more than 5700 die, mostly because they have no access to HIV prevention, treatment and care services. Despite progress made in scaling up the response over the last decade, the HIV pandemic remains the most serious infectious disease challenge to global public health.

At the forefront of the war against HIV, health service providers are positioned to respond with needed services and care (Li et al., 2007). It is acknowledged that personal factors, health care systems and cultures may have an impact upon the willingness of nurses to work with HIV-positive people (Ives et al., 2009). While general societal attitudes towards PLHIV may be less favourable, these negative attitudes may also be seen among health care personnel (Tyer-Viola, 2007). In Lithuania, the AIDS Centre conducted an anonymous survey in 1990 to clarify the attitude of medical staff towards those living with HIV. The results showed that up to 90% of the medical staff were not willing to care for patients with HIV. Although the situation changed over the years (from 1990 to 1999) and the proportion of staff unwilling to care for patients with HIV was reduced to 52.9%, doctors and nurses, in particular those not working in major cities, still feel a certain fear and tend to separate people living with HIV (Lithuanian country report, 2007). For example, 78% of Lithuanian health care workers would not allow their child to a kindergarten group, which is visited by a HIV-positive child (Lithuania National AIDS Program Evaluation, 2005). These examples show that broad-scale education and extensive information to reduce these barriers are still required.

However, little research has focused on adapting the education interventions to target new behaviours associated with HIV, such as increasing nurses’ engagement in HIV health care and supportive services.

The MEDLINE, Cochrane Library, ERIC databases, and Lithuanian AIDS Centre were searched for relevant English-language citations.
between 2000 and 2010 using the following search terms: education intervention, HIV, Lithuania, nurse, and willingness to take care. The keywords were used both alone and interchangeably.

Background

Willingness to care is defined as the caregiver’s attitude towards providing emotional, physical and instrumental support for PLHIV. When willingness to care is assessed in the context of an existing relationship, the primary concerns are whether the relationship can be sustained over time and what issues or perceptions may need to be addressed to make it mutually functional for caregiver and care recipient (Abell, 2001).

It has been debated whether it is ethically permissible to refuse to treat those with HIV. Ehrenstein et al. (2006) found that 28% of German healthcare workers may abandon work in favour of protecting themselves and family. Another study (Qureshi et al., 2005) found that the most significant barrier to US healthcare workers’ willingness to work with PLHIV was fear for their own and their family’s health.

Most recent studies (Gurung and Sangchart, 2008; Williams et al., 2006) reported that the majority of nurses are willing to care for and treat PLHIV, but some other studies (Oyeyemi et al., 2008; Cai et al., 2007) showed that nurses are reluctant to deal with these patients. Different background factors have been found to have an impact on whether nurses are willing to provide care or not: cultural values (Oyeyemi et al., 2006), age (Valimäki et al., 2008), gender (Oyeyemi et al., 2008; Cai et al., 2007), whether nurses have met (Tyer-Viola, 2007), taken care of (Oyeyemi et al., 2008; Pisal et al., 2007; Williams et al., 2006; Peate et al., 2002) PLHIV or worked with colleagues with HIV (Kiragu et al., 2004). The number of working years has been shown to be negatively associated with willingness to treat PLHIV (e.g. Worthington et al., 2008). Furthermore, nurses’ willingness to take care of PLHIV has been found to be related to whether the HIV-positive people were homosexuals, intravenous drug users or prostitutes (Tyer-Viola, 2007).

Nurses’ continuing education may be a way to support nurses’ willingness to care for PLHIV. Slaten et al. (2000), for example, reported after seven training workshop sessions during a five-month period a positive impact on nurses’ willingness to take care of PLHIV. Buskin et al. (2002) found after two lectures that additional education could help eliminate a substantial amount of unwillingness to be in proximity of a person with HIV. It is not clear, however, what educational methods would be best to make an impact. In most intervention studies educational programmes have included workshops (Williams et al., 2006; Ezedinachi et al., 2002; Slaten et al., 2000) or lectures (Buskin et al., 2002). It has been assumed that the educational programmes related to HIV should consist of various different teaching methods to allow debating and discussion about willingness to take care of PLHIV (Wu et al., 2002; Uwakwe, 2000)

Models of education that show most promise are those that use experiential styles of learning. It has been shown that it is possible to increase nurses’ empathic ability (e.g. Bruneo et al., 2010). Furthermore, Uwakwe (2000) found that an indicator of the degree of success of the programme is the increased willingness of the participating nurses subsequently to work with and treat PLHIV.

The aim of the study is to explore the impact of an intervention programme on nurses’ willingness to take care of HIV-positive people in Lithuania.

Methods

Participants and randomisation

In Lithuania, AIDS is a late arrival (Caplinskas, 2004). While the first HIV-positive case was reported in 1988, today there are 1506 positive cases in the country (population about 3.5 million) (Lithuania AIDS Centre, 2009). The study population was made up of registered nurses in Lithuania who work in the surgical, medical, or gynaecological wards of the hospital and in primary health care centres attached to the hospitals. These nurses were selected because they worked in both hospitals and primary health care areas, and were thus at the front line of HIV prevention, care and advocacy.

All nurses in the selected wards of three Lithuanian hospitals (approximately 300 from each) and primary health care centres attached to the hospital areas constituted the selected population. Firstly, nine biggest Lithuanian hospitals were chosen for the study. Three hospital areas were randomly selected from these. A total of 240 randomly selected nurses from these hospital areas were invited to participate in the study. The recruitment occurred at the same time for all groups. The study utilized a randomized controlled trial design with pre-test evaluation and a three-month repeated follow-up evaluation. Randomisation was made by a statistician together with the researchers.

To determine the number of participants needed in the study, we performed a power analysis for a one-way ANOVA. The minimum required number of participants was 55 per group. However, we decided to increase the sample size because of possible dropouts. A total sample of 240 participants was recruited: the first educational intervention (two-day workshop and written material) group consisted of 80 participants (EG1), the second educational intervention (written material) group consisted of 80 participants (EG2), as did the control group (CG). The participants were selected by the cluster random sampling method using the SPSS 12.0 statistical analysis software. Nurses from one hospital were selected for the first intervention group, nurses from the second hospital were chosen for another intervention group and nurses from the third randomly selected hospital were used as a control group. The data collection was conducted between December 2008 and March 2009.

The first data collection sample included 206 participants. The response rate was 86.3% (n = 69) in EG1, 87.5% (n = 70) in EG2 and 83.8% (n = 67) in CG in December 2008. The follow-up data collection consisted of 185 participants. The response rate after one reminder letter (in March 2009) was for the first group 79% (n = 63), for the second group 79% (n = 63) and for the control group 74% (n = 59).

Educational intervention

There were two different educational interventions in this study. The first intervention included a two-day workshop (13 h) and the distribution of written material (20 pages). The content areas covered were: HIV and AIDS related epidemiology and history, prevention, transmission, HIV treatment, and counselling HIV-positive patients and ethical considerations. The intervention included lectures, group discussions, conversations with a HIV-infected person, watching a film about HIV and the distribution of written materials. The lectures were delivered by a physician–nurse pair. Also an HIV-positive person participated in the group discussions. In addition to the lecture handouts, the participants were asked to review Lithuanian academic journal articles (20 pages) of the content areas mentioned above.

The second intervention consisted of the articles (20 pages) that were provided to the EG1 nurses and two pages about new statistics of the HIV situation in Lithuania and in the world from EG1 were provided to EG2. In total, EG2 participants received 22 pages of written materials. CG nurses received no lectures or written materials.

Additionally, the participants from both intervention groups received continuing education credits as participation incentive from the continuing educational centre.

Outcomes

The pre-test was done at the beginning of the first day of the two-day workshop among the members of the first education intervention group (EG1) in December 2008. The other groups (EG2 and CG)
received the questionnaires at the same time by post. Reminder letters (both pre-test and post-test) were sent to all participants one week later. The post-test was repeated for all groups after three months by post.

The questionnaire used consisted of two parts: the background questions and The Nursing Willingness Questionnaire (NWQ). The background questions asked for demographic information (i.e., age, gender, mother tongue, marital status, number of children, education, and work experience) while the general questions were related to taking care of HIV positive (i.e. if they were willing to care for PLHIV). Additionally, the respondents were asked to answer dichotomous questions (yes/no answers). They were also asked about their general willingness to take care of PLHIV.

The nurses’ willingness to care for PLHIV was evaluated using the NWQ scale developed by Dubbert et al. (1994). Previous studies suggest that the NWQ is a reliable and valid instrument for evaluating a construct of current concern to nursing administrators and educators (Dubbert et al., 1994). The original self-report instrument used a 370-word vignette, whereas the present modified version was reduced to a vignette of 13 English words to describe a person who has progressed to AIDS (called Henes), whose health was deteriorating. The patient’s symptoms were: diarrhoea, high temperature, double incontinence, vomiting and mental confusion. Using these items, the nurses’ willingness to carry out certain nursing activities was explored by 13 items (1 = strongly agree, 2 = agree, 3 = undecided, 4 = disagree, 5 = strongly disagree).

The translation into Lithuanian was achieved by using the back-translation technique (Burns & Grove, 2001). The modified version has previously been used and found to be valid and reliable in Finland, Estonia and Lithuania; for the whole data set among the three countries the Cronbach’s alpha value was 0.93 and in Lithuania 0.95 (Välimäki et al., 2008). In the current study, the Cronbach’s alpha values for the total data set were 0.83 (in the three groups before the intervention) and 0.81 (in the three groups after the intervention) which varied before and after the intervention among the groups as follows: for the first group 0.74/0.79, second group 0.84/0.74 and control group 0.81/0.87.

Ethical considerations

Permission to conduct the study was obtained from institution authorities and approved by the Ethics Committee of the hospitals and one university. Each participant was given a unique identification (ID) code which was used during the research and evaluation process to ensure nurses’ confidentiality. Individual consent was sought from the study participants before starting the study. The consent forms and the letters informing about the study were mailed to the possible participants. The letter contained relevant information on the study and a statement of voluntary participation, as well as assurances of confidentiality and honesty in the reporting of the results. The nurses (EG2 and CG) were provided with information on respondent anonymity, and all nurses were free to withdraw without prejudice at any stage of the research. Additionally, the researchers were working at universities, and study participants in hospitals or public health care centres.

Data analysis

Statistical analysis of the data was performed by using the SPSS 12.0 software package. Nurses’ demographic variables and items concerning their perceptions related to their willingness to care for PLHIV were examined using descriptive analysis. After testing for normality, we used parametric and nonparametric criteria, the Student’s t, ANOVA, and Mann–Whitney and Kruskal–Wallis tests to compare two or more groups. Cronbach’s alpha was used to evaluate the internal consistency of the scales. P-values less than 0.05 were interpreted as statistically significant. In the following text only statistically significant results are reported.

Results

Sample data and numbers analyzed

All participating nurses were female (n = 206, 100%). The nurses ranged in age from 23 to 67 years, their mean age being 43.1 (SD = 8.8). The nurses in the first group were the youngest, with the difference between the groups being statistically significant (p = 0.016). Nurses in the first group had less children (p = 0.46), and more university-level qualifications (p = 0.001). Also the length of the nurses’ work experience at the present workplace varied in the different groups as follows: EG1 0.5–3.8 (mean 19.7, SD 8.8); EG2 0.8–46 (mean 23.5, SD 10.00) and CG 2.0–40 (mean 22.2, SD 9.11). The nurses from the first group had the least work experience (p = 0.051). Other demographic differences are presented in Table 1.

Intervention impact on willingness to care

Our educational interventions, meaning the workshop and the written materials distributed to the nurses (EG1), or the written materials distributed alone (EG2), did not have an impact on the nurses’ willingness to take care of PLHIV. However, the nurses from all groups were willing to care for PLHIV even before the education intervention (NWQ scores: 1.27–1.41), 1 meaning the most positive and 5 the most negative score.

Changes in willingness were found only in EG1, among those who had received the workshop and the written materials (mean score 1.37, SD 0.66), but the result was not statistically significant (Table 2).

When comparing the nurses’ willingness in the 13 specific nursing activities, it was found that, because of the intervention, nurses in EG1 were more willing to take an HIV-patient’s vital signs, clean supplies, complete catheter care, shave, empty the urinary draining bags, start intravenous fluids and administer a blood transfusion, that is, do more “dirty” nursing activities than before the intervention (Table 3).

Before the intervention, nurses from EG2 were the most willing to care for PLHIV (mean score 1.27, SD 0.59) while those from the CG were the least willing to provide care (mean score 1.52, SD 0.77).

There were no statistically significant changes in the nurses’ willingness to take care of PLHIV in EG2 nor in CG after the intervention.

In EG2, participants were asked to answer just one general background question on whether they were willing to take care of PLHIV or not. After the intervention, the nurses tended to be more willing to take care of PLHIV (mean score 1.11, SD 0.15 versus mean 1.21, SD 0.33, p = 0.066).

As a background factor, all participants were asked to answer one general question concerning their willingness to take care of a patient with HIV. We found that after the intervention, nurses from all three groups: EG1 68%, n = 43; EG2 89%, n = 56; CG 93%, n = 55, reported unwillingness to take care of a patient with HIV.

Adverse event

No adverse events occurred during the intervention study.

Discussion

We should point out that there could be some limitations in using the three intervention arms because of the demanding practical arrangements and/or scenario used in this teaching programme. However, at the same time it was valuable to see the impact of two different programmes in a country with limited funding possibilities.
### Table 1

Association between EG1, EG2 and CG and background factors with the nurses’ willingness to care for patients with HIV/AIDS.

| Variable                          | N | Mean score (SD) | N | Mean score (SD) | N | Mean score (SD) | N | Mean score (SD) | N | Mean score (SD) | N | Mean score (SD) |
|----------------------------------|---|-----------------|---|-----------------|---|-----------------|---|-----------------|---|-----------------|---|-----------------|
| Language                         | 69 | 1.62 (0.648)    | 70 | 1.27 (0.599)    | 67 | 1.28 (0.553)    | 66 | 1.53 (0.775)    | 58 | 1.53 (0.788)    | 59 | 0.745          |
| Lithuanian                       | 62 | 1.51 (0.453)    | 6 | 1.86 (0.641)    | 3 | 1.20 (0.235)    | 3 | 1.05 (0.089)    | 1 | 1.00            | 1 | 1.00           |
| Russian                          | 12 | 1.46 (1.08)     | 70 | 1.29 (0.634)    | 50 | 1.29 (0.607)    | 54 | 1.51 (0.809)    | 12 | 1.55 (0.828)    | 18 | 0.857          |
| Married                          | 69 | 1.43 (0.772)    | 11 | 1.29 (0.456)    | 11 | 1.13 (0.176)    | 11 | 1.57 (0.673)    | 10 | 1.39 (0.577)    | 59 | 0.509          |
| Marital status                   | 69 | 1.49 (0.655)    | 13 | 1.19 (0.302)    | 12 | 1.15 (0.321)    | 2 | 1.54 (0.326)    | 1 | 1.00            | 0.221         |
| Divorced or widowed              | 69 | 1.46 (1.08)     | 11 | 1.22 (0.322)    | 12 | 1.34 (0.661)    | 2 | 1.54 (0.326)    | 1 | 1.00            | 0.221         |
| Have children                    | 55 | 1.39 (0.588)    | 50 | 1.42 (0.722)    | 58 | 1.30 (0.628)    | 63 | 1.47 (0.731)    | 56 | 1.50 (0.787)    | 59 | 0.952          |
| Education                        | 69 | 1.41 (0.655)    | 13 | 1.19 (0.302)    | 12 | 1.15 (0.321)    | 2 | 1.49 (1.003)    | 3 | 1.77 (0.857)    | 2 | 1.06           |
| Work area                        | 69 | 1.51 (0.972)    | 19 | 1.31 (0.928)    | 18 | 1.27 (0.758)    | 18 | 1.53 (1.102)    | 16 | 1.36 (1.001)    | 16 | 0.425          |
| Medical school                   | 37 | 1.32 (0.511)    | 51 | 1.24 (0.642)    | 45 | 1.27 (0.570)    | 55 | 1.57 (0.825)    | 40 | 1.49 (0.852)    | 30 | 0.301          |
| College                          | 37 | 1.32 (0.511)    | 51 | 1.24 (0.642)    | 45 | 1.27 (0.570)    | 55 | 1.57 (0.825)    | 40 | 1.49 (0.852)    | 30 | 0.301          |
| Primaries health care            | 17 | 1.54 (0.562)    | 17 | 1.28 (0.554)    | 17 | 1.71 (0.730)    | 17 | 1.65 (0.732)    | 17 | 0.795          | 17 | 0.795          |
| Having a family member or knowing any other person with HIV/AIDS? | 20 | 1.28 (0.537)    | 18 | 1.30 (0.521)    | 19 | 1.51 (0.738)    | 19 | 1.51 (0.728)    | 18 | 1.51 (0.728)    | 16 | 0.850          |
| Having been asked to take care of a patient with HIV/AIDS | 11 | 1.08 (0.150)    | 10 | 1.28 (0.510)    | 10 | 1.27 (0.575)    | 17 | 1.42 (0.655)    | 14 | 1.53 (0.770)    | 12 | 0.837          |
| Having refused to take care of a patient with HIV/AIDS | 58 | 1.47 (0.631)    | 51 | 1.27 (0.594)    | 50 | 1.56 (0.811)    | 45 | 1.51 (0.797)    | 45 | 0.564          | 45 | 0.564          |
| Having taken care of a patient with HIV/AIDS | 23 | 1.30 (0.526)    | 22 | 1.22 (0.478)    | 22 | 1.41 (0.604)    | 23 | 1.45 (0.633)    | 23 | 0.758          | 23 | 0.758          |
| Willingness to take care of a patient with HIV/AIDS | 16 | 1.30 (0.526)    | 12 | 1.21 (0.333)    | 12 | 1.11 (0.153)    | 9  | 1.12 (0.145)    | 4  | 1.06 (0.115)    | 36 | 0.368          |

The mean difference is significant at the 0.05 level (Mann–Whitney Test).
EG1 – intervention group (2-day workshop and written material); EG2 – intervention group (written material); CG – control group.
The aim of this study was to ascertain what kind of impact the intervention has on nurses' willingness to take care of HIV-positive people or those with AIDS in Lithuania. The ultimate goal was to create a realistic teaching programme with limited funding in order to establish an ongoing continuing education programme for Lithuanian nurses. Our study revealed that, in general, nurses from all three groups (EG1, EG2 and CG) were willing to perform required nursing activities for a fictional person who has progressed to AIDS (see Dubbert et al., 1994).

As health professionals become part of the social space of people living with these infections, they become part of the patient's social surroundings as empathic figures, people who know "how it feels" (Worthington et al., 2008). HIV-related stigma is reduced if PLHIV are not seen as "different". However, when using just one general background question on whether nurses were willing to take care of PLHIV, up to 93% of the control group nurses reported unwillingness to care for PLHIV. Keeping in mind that drug use is the main route of transmission in Lithuania, this may be a potential cause of the lack of willingness to provide care. Drug use generally is a stigmatised activity, which is why people may be unwilling to care for drug users.

Although our first teaching intervention showed a positive impact on nurses' knowledge level (Mockiene et al., 2011) only minor changes could be observed in the willingness to care. After the educational intervention, nurses in EG1 were more willing, for example, to carry out daily nursing activities such as to clean up faeces or vomit only using gloves and feed dinner. Similar results were obtained by Wu et al. (2002) and Williams et al. (2006). However, the fact that nurses in the first intervention group were younger, had more university-level qualifications and less work experience at the present ward than in the other groups, may have had a positive impact on the results (see also Vallimaki et al., 2008, Worthington et al., 2008).

The distribution of written materials only (EG2) did not have a positive impact on increasing nurses' willingness to take care of PLHIV. Uwakwe (2000) indicated that the mere production of HIV information materials and dissemination with minimal personalized contact does not always yield optimum results in health behaviour modification and written materials, no matter how good they are, may not always be read by the target group.

Our study showed that the nurses who had more work experience were more willing to care for PLHIV than nurses whose work history was short. This result differed from the results of another study which showed that the number of years in professional practice was negatively associated with willingness to treat PLHIV (Worthington et al., 2008). It is likely that the preparation of nurses to take care of HIV-positive patients is influenced by different educational backgrounds, whereas the limitations of the education systems in Lithuania, for example, can be problematic in themselves.

According to Williams et al. (2006), nurses need to have the knowledge and confidence to protect themselves from performing...
this work effectively, and must be well-informed about the clinical course of HIV and about effective strategies for its prevention and treatment. Besides, they must be prepared to care for patients from a variety of cultural and social backgrounds whose experiences and values may differ from their own, and recognize that patients with HIV should be given the same care as HIV-negative patients.

Conclusion
The present study was the first attempt to conduct a RCT in the field of nursing research in Lithuania. We emphasize the importance of such studies in all East-European countries in order to develop evidence-based nursing. Even though it is problematic to carry out research on interventions (also internationally), and usually the conclusions cannot explain causality, such studies are needed to advance nursing knowledge (Hallberg, 2009). This is also true for research on implementing evidence for education.

Several variables may affect empathy education that need to be accounted for in future studies such as gender, cultural values and clinical speciality experience. Models of education that show most promise are those that use experiential styles of learning. Studies have accounted for in future studies such as gender, cultural values and research on implementing evidence for education.

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The fact that Lithuania was attributed to the low-prevalence countries after the first HIV cases, had a negative impact of HIV awareness. This might have been influenced by the attitude towards continuing studies of nurses. However, having reviewed the plans of the institutions providing services in Lithuania, it was noted that the training in this area is the thing that nurses miss most. It is therefore important to focus on improving nurse education, and basic educational support should be a priority for those working with PLHIV. A more organized educational structure, targeted at all health care professionals in the form of health talks/ seminars, in-service training, continuing medical education and nursing curricula, would improve the knowledge level related to HIV for health care providers most efficiently and effectively. Consequently, educational programmes based on research evidence must play a leading role in educational strategies to help nurses understand HIV-positive people and change their attitudes towards taking care of them. In the future, we need more outcome research and intervention studies to assess their effects systematically as stated by Hallberg (2006).

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