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Features

IMPLEMENTATION AND EVALUATION OF INTERVENTIONS FOR HOME CARE AIDES ON BLOOD AND BODY FLUID EXPOSURE IN LARGE-GROUP SETTINGS

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ABSTRACT

Participatory research conducted with academic, union and management cooperation resulted in the development, implementation, and process evaluation of interventions designed to reduce occupational blood and body fluid exposure among home care aides. Home care aides working for a large urban home care agency took part in the design and implementation of an interactive participatory training program conducted in large-group settings, and the development and evaluation of two training tools: an information card for home care aides and a sharps safety magnet for their clients. A process evaluation conducted immediately following the interactive training program found that 72 percent of the home care aides preferred it to lecture-style trainings typically offered, while only 9 percent preferred typical trainings. Home care aides were able to effectively articulate information learned during the interactive training program, with less than 2 percent providing inaccurate information about what was taught during the training. Home care aides overall responded positively to the information card and the magnet, with aides caring for clients who used sharps rating the tools as more useful. Participatory training programs can be effectively implemented in a large-group setting.

Keywords: home care, training, interventions, blood

Home care aides, also known as personal care attendants or home makers, play a vital role in health care by performing personal care duties/services in the

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home for the sick, elderly, and disabled. They provide help with daily activities such as walking, bathing, dressing, toileting, grooming, and preparing meals; help with house cleaning and laundry, and with trash handling and disposal; monitor medical conditions by observing vital signs; transport and escort clients; and remind clients to take medications. According to the Bureau of Labor Statistics 2006 data, there are approximately 767,000 home care aides, working for 20,000 home care agencies serving more than 7.6 million individuals in the United States [1–3]. These numbers may be an underestimate since many home care aides work as independent contractors. A California study on home care aides identified 200,000 working in that state alone [4].

The assistance that home care aides provide enables their clients to stay at home rather than in long-term care facilities. However, aides work in uncontrolled and isolated environments with occupational health and safety hazards that are challenging to control. Home care aides are provided very little training and education about the occupational hazards they face in their daily work; and if training is available, it is often inadequate for this linguistically and culturally diverse worker population. This may be because home care aides are perceived to be unskilled workers and home care is considered to be safe by many. Yet, home care aides face physical, ergonomic, biological, and environmental hazards in their daily work. A study of homes of people aged 70 and older was conducted to evaluate the prevalence of environmental hazards such as poor lighting, clutter, no handrails near steps, slippery bathtub/shower, and extension cords across walkways in the home [5]. Over 80 percent of the homes in this study had at least one environmental hazard, and 39 percent had at least five environmental hazards [5]. Additionally, a retrospective case-control study examining occupational injuries among home care aides in Sweden found that those who received poor institutional support from their employers were significantly more likely to be injured at their place of work (OR = 4.1, 95% CI [2.5,6.7]) [6]. In the Swedish study, 1997 and 1998 data from the Swedish disability pension system were examined, looking at individuals who received pensions as the result of occupational injuries.

Home care aides also face occupational hazards as a result of exposure to blood and body fluids, a risk for bloodborne infections such as HIV and Hepatitis B and C [7]. This paper details the process behind the development and implementation of a tripartite intervention program designed to increase home care aides' awareness of the risk for blood and body fluid exposure in the home care workplace.

BACKGROUND

The intervention program detailed in this process evaluation was part of a larger National Institute for Occupational Safety and Health (NIOSH)–funded study (R01OH008237) examining exposure to blood and body fluids in home

care aides, conducted in Chicago, Illinois, by the University of Maryland, School of Nursing (UMSON) and the University of Illinois at Chicago, School of Public Health (UICSPH). The Service Employees Industrial Union Healthcare Illinois & Indiana (SEIU Healthcare IL & IN) also served as a partner in the intervention program, providing assistance in its implementation and development. The intervention program consisted of a training program and two intervention tools designed to help prevent occupational exposure to blood and body fluids among home care aides.

At the time of this project, the state of Illinois required home care agencies to deliver a minimum of 16 hours of training per year for home care aides, but did not provide specific guidelines, funding, or assistance on what these training sessions should include.

This process evaluation focused on the implementation of an intervention program in a large not-for-profit home care agency in Chicago, Illinois, which conducts 28 hours of training per year with its home care aides during quarterly full-day Saturday sessions. Researchers from UMSON and UICSPH, in partnership with the SEIU Healthcare IL & IN, adapted and conducted the training program and developed and distributed the intervention tools at different times to home care aides during the required employee training sessions. Notably, the employer had a relatively large Russian-speaking population. Therefore, the training program and intervention tools were developed and implemented in both English and Russian.

The training program about blood and body fluids exposure examined in this process evaluation is a modified version of a program previously developed by the Academy for Educational Development on blood pathogen exposure in home health care. Originally, the training program was designed to be taught in small-group training sessions of 25 or less, but was modified to be taught in large-group settings for the purpose of this project. This use of small-group training exercises in large-group settings throughout the intervention program being evaluated is what makes this process evaluation unique. The small-group exercises adapted for this project were chosen because of their interactive and participatory, problem-posing nature and the quality of information provided.

A lecture-style format is the mode of content presentation for the majority of the trainings typically conducted by the targeted home care agency. Interactive small-group participatory activities are not typically attempted in large-group training programs due to the difficulties associated with trying to adapt small-group exercises to large-group settings, including developing interactive curricula and engaging additional facilitators. However, the key factor that enabled researchers to adapt small-group exercises to large-group settings for both training and the distribution of the intervention tool was the use of peer education, where home care aides were recruited to serve as trainers.

The intervention tools for blood and body fluid exposure training were developed in the context of an established and ongoing labor-management committee

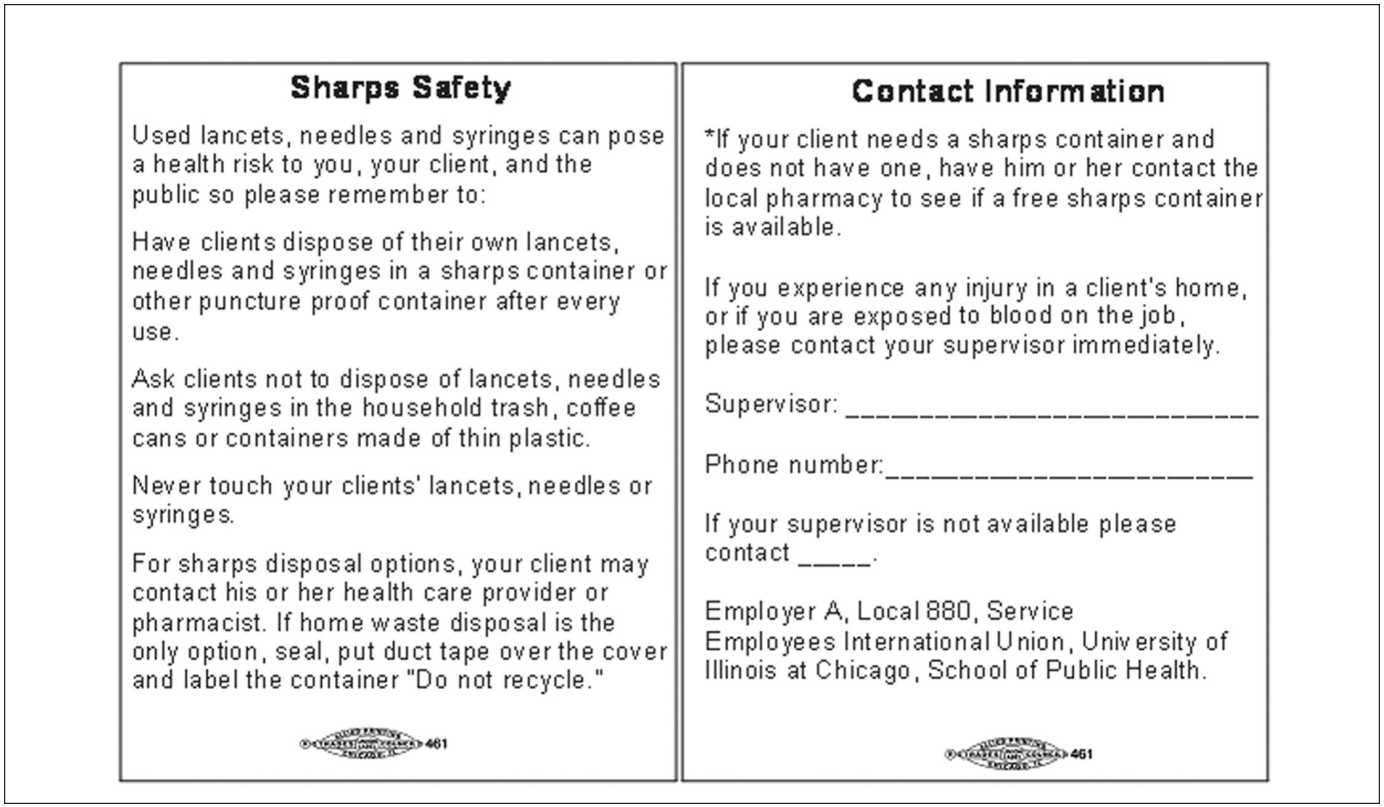
between SEIU Healthcare IL & IN and the participating home care agency, in which the researchers were invited to participate. During the working group meetings, researchers, labor, and management representatives in home care discussed the issue of blood and body fluid exposure among workers and how it could be prevented. It was from these sessions that the idea arose for developing the two intervention tools: the worker information card (Figure 1) and the sharps safety magnet (Figure 2). The purpose of the worker information card was to provide a simple, accessible resource that home care aides could refer to about what they should do and whom they should contact if they were ever exposed to blood or body fluids in the workplace. The purpose of the sharps safety magnet was to provide information on sharps safety to the clients of home care aides, and to assist home care aides in discussing sharps safety and proper disposal with their clients.

The use of small-group interactive participatory trainings and peer education programs has been shown to be an effective method of training workers to improve health and safety [8–10]. Research examining 95 quasi-experimental studies using various methods of training has shown that more engaging training, and hands-on training requiring active participation, resulted in workers demonstrating greater knowledge acquisition, and consequently, reductions were seen in the number of accidents, illnesses, and injuries [11]. A study of union-based educational programs conducted by the United Automobile Workers' Union (UAW) examined the effectiveness of using: 1) experts as trainers; 2) experts and peer educators as trainers; and 3) peer educators alone as trainers. The study found that safety training programs conducted with the use of peer education were more effective in communicating health and safety than those conducted only with the use of professional trainers [12]. The authors hypothesized that this is because peers communicate, relate, and interact in a different manner than others. Additionally, factors associated with peer education have been shown to correlate with the established theories of learning in education such as social learning theory, social inoculation theory, role theory, differential association theory, subculture theory, and communication of innovations theory [13].

This process evaluation describes the development and implementation of a training program and intervention tools designed to educate and prevent exposure to blood and body fluids in home care among the English-speaking home care aides. Although the development and implementation of a training program and intervention tools for the Russian-speaking population was identical, it will not be examined here.

OBJECTIVES

The goal of this process evaluation is to describe and evaluate the interventions developed to prevent blood and body fluid exposure in home health care. Specific objectives are:



Sharps Safety

Used lancets, needles and syringes can pose a health risk to you, your client, and the public so please remember to:

Have clients dispose of their own lancets, needles and syringes in a sharps container or other puncture proof container after every use.

Ask clients not to dispose of lancets, needles and syringes in the household trash, coffee cans or containers made of thin plastic.

Never touch your clients' lancets, needles or syringes.

For sharps disposal options, your client may contact his or her health care provider or pharmacist. If home waste disposal is the only option, seal, put duct tape over the cover and label the container "Do not recycle."

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Contact Information

*If your client needs a sharps container and does not have one, have him or her contact the local pharmacy to see if a free sharps container is available.

If you experience any injury in a client's home, or if you are exposed to blood on the job, please contact your supervisor immediately.

Supervisor: _____

Phone number:_____

If your supervisor is not available please contact _____.

Employer A, Local 880, Service Employees International Union, University of Illinois at Chicago, School of Public Health.

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Figure 1. Worker information card.

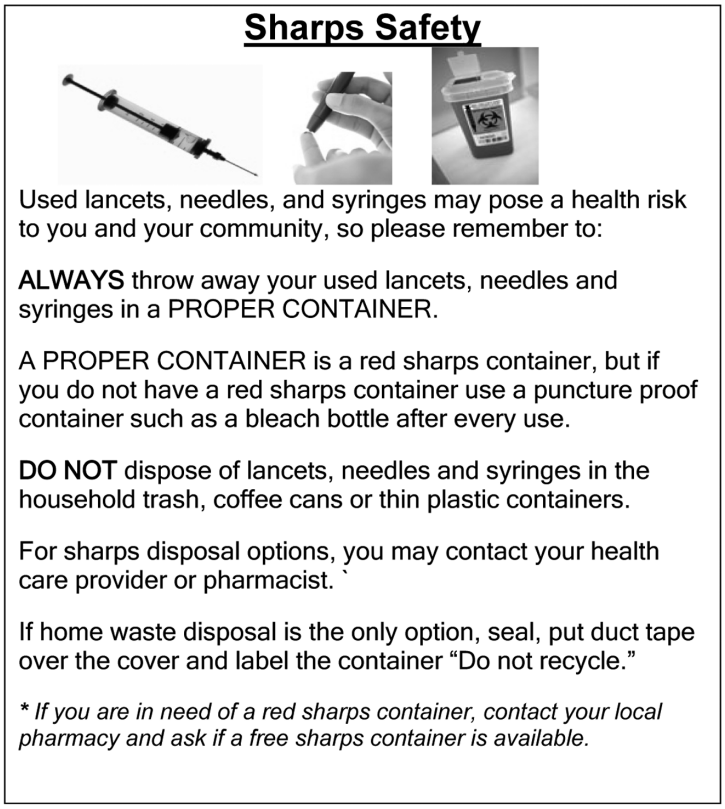

Figure 2. Sharps safety magnet.

- describe the implementation and immediate process evaluation of the training intervention;
- describe the development and immediate process evaluation of the two intervention tools (the worker information card and the sharps safety magnet); and
- examine the views of home care aides on the usefulness and utility of the training program and two intervention tools.

METHODS

Training Program

The home care agency that took part in this research required its employees to undergo quarterly training on selected Saturdays from 8 a.m. to 5 p.m. The agency employed approximately 1,200 home care aides in the Chicago area and,

because of its size, each of the quarterly trainings was offered on four Saturdays. The number of participants in each session ranged from 80 to 150, and each home care aide was required to attend only one of the sessions in a quarter. One of the four sessions was conducted in Russian to accommodate a large segment of the employed population, and the other three sessions were conducted in English. As part of the training program on blood and body fluid exposure, the University of Maryland, School of Nursing, and the University of Illinois at Chicago, School of Public Health, researchers assumed responsibility for the full day of training sessions in one quarter, including the session in Russian.

In order to adapt the original large-group lecture approach to a small-group dialogic training program, curriculum activities were created, small-group trainers were oriented to their roles by the training facilitator, and the activities and the learning environment were re-oriented so that participants were sitting at tables forming small groups. All of the previous employee trainings for the participating home care agency were conducted in an auditorium-style setting, with movable tables and chairs, and the home care aides were placed in groups of 10 to 15 individuals within the large auditorium.

Peer trainers were recruited by union organizers based on their willingness to engage their peers in learning activities, their experience and activity with union organizing and activities, and their confidence in standing up and encouraging dialogue with their peers around the learning activities [14, 15]. Trainers received a three-hour orientation by the facilitator at the union in the days leading up to the session and were then assigned to a group of one or two home care aides. Trainers led participants through the activity questions and group discussion, while a facilitator at the front of the auditorium helped guide everyone through the training program, as detailed in Figure 3. At least one trainer was assigned to every two groups in the setting, in addition to a facilitator to help guide discussion and to effectively conduct the adapted training program during the four sessions; thus a total of 15 to 30 trainers were required. The primary group of trainers were home care union members who worked for the agency. Additional volunteers from the UICSPH, UMSON, SEIU Healthcare IL & IN, and the participating home care agency were recruited to help fill the role of trainers. The involvement of the train-the-trainer volunteers, including active union members and nursing and public health students, required an orientation to acquire familiarity with training goals, methods, materials, and activities as well as the application and distribution of the intervention tools prior to each worker training session.

The adapted small-group interactive participatory training consisted of three 90-minute exercises designed to help make home care aides aware of risks for exposure to blood and body fluids and other occupational hazards in the workplace. The facilitator described the purpose of the activity to the entire group and then at each table the trainers described the problem-posing question or case study for discussion. Participants offered responses verbally or in writing,

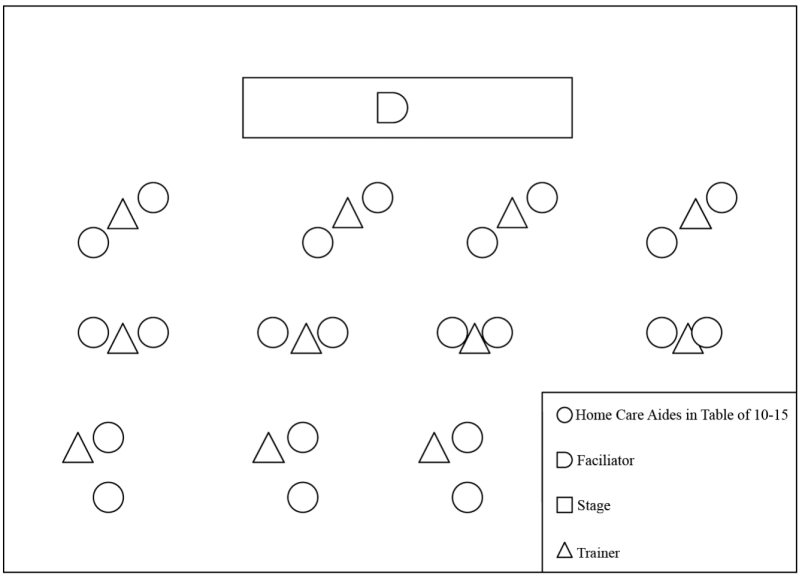

Figure 3. Sample diagram of the training program setting.

discussing their views with each other at the table. One participant or the trainer summarized or synthesized these responses. The training facilitator then brought the focus of the entire group back together for a report back from selected groups on the responses, and then summarized the salient messages related to participant knowledge and action.

The first exercise involved having the home care aides explore why home care work can be risky to their health and how to identify some of the risks they may face in their everyday work. The second exercise involved helping to educate the home care aides as to why blood and body fluid exposure is important in home care and the importance of taking universal precautions. The third exercise explored risks home care aides faced in getting injured while lifting, moving, or transferring clients and ways to protect workers from these injuries.

Intervention Tools

The worker safety card and sharps safety magnet were distributed approximately one year following the training program during a quarterly Saturday training session with the employer. The intervention tools were distributed as part of a 1.5-hour review session on blood and body fluid exposure in home care that was conducted four times; three times in English and once in Russian,

just as the training program was. These review sessions were part of all-day, Saturday trainings with this agency on other topics such as elder abuse. Attendance at these sessions ranged from 150 to 800 participants.

The intervention tools were designed to serve as a review of the importance of blood and body fluid exposure, and to assist home care aides in discussing proper sharps disposal with their clients. During the sessions, a facilitator, with the assistance of 10 to 15 trainers, presented each of the training tools. Following a description of the two intervention tools, an exercise was conducted in which each home care aide was asked to work with a partner in a role-playing exercise that involved giving the sharps safety magnet to their clients. During the role-playing, one person would act as the home care aide and one as the client. They discussed sharps safety with each other and then switched, allowing for each person to play both roles. Following the role-playing, the trainers facilitated group discussion on issues that arose during the exercise. Individuals were recruited to serve as trainers for the intervention tools session in the same manner as for the blood and body fluid exposure training program. Special train-the-trainer sessions were also conducted for those who volunteered to serve as trainers.

Evaluation

In order to evaluate the training program on blood and body fluid exposure, a short training evaluation questionnaire and a head, hands, heart evaluation (described below), from a template created by Robyn Robbins and Jackie Nowell of the United Food and Commercial Workers Union, were used. The training evaluation questionnaire, which was given immediately following the first English-speaking training session, was completed individually by the home care aides. It asked participants how they felt about this training compared to the traditional lecture-style trainings they had participated in, and to name something they learned from this session. The head, hands, heart evaluation, which took place immediately after the other two English-speaking training sessions, was completed by the home care aides in groups. It asked participants to list different things they learned (head), what they will do differently as a result of the training (hands), and how they felt (heart). Completion of the survey and head, hands, heart evaluation was voluntary and all results were anonymous.

To evaluate the two intervention tools on blood and body fluids exposure, a short survey instrument was developed. This survey was completed individually and completion was voluntary and anonymous. The home care aides were asked if they had clients in need of sharps containers; if they felt the information card was useful in informing them what steps should be taken if blood or bodily fluid exposure occurs; if they felt the safety magnet would be useful for clients in informing them about sharps safety and blood or body fluid exposure; if they felt the magnet would be useful in helping them talk to their clients about

sharps safety and blood or bodily fluid exposure; and if they thought their clients would post the magnet in their homes.

Population

In all, 1,006 home care aides took part in the three English-speaking training sessions on blood and body fluid exposure in home care, participating in groups of 367, 340, and 299. One year later, a total of 1,027 home care aides participated in the three English-speaking training sessions that involved the distribution of intervention tools. Additionally, 165 Russian speakers participated in the blood and body fluid exposure training session, and 153 attended the session in which the intervention tools were distributed. The findings from these Russian-speaking trainings were not analyzed in this process evaluation.

Statistical Methods

For this process evaluation, all of the data and responses collected from the intervention participants were entered into a Microsoft Access 2003 database. The data analysis was conducted using SPSS 16.0 for Windows. For the training programs, the cross-tabulations and frequencies were used to describe the responses of the session participants. For the two intervention tools, chi-square analysis was used to evaluate their effectiveness. The dependent variable in evaluating the tools' effectiveness was whether or not the home care aides had clients in need of sharps containers. The independent variables were the additional questions asked in the short intervention tool survey.

RESULTS

Training Program

Of the 367 home care aides who took part in the first English-speaking training session, 246 (67%) participated in the short training evaluation questionnaire. The data collected revealed that 72 percent of the individuals who completed the survey preferred the modified small-group interactive training exercise that was performed compared to the typical lecture-style trainings in which they participated; 9 percent said they did not prefer the small-group, interactive training; 19 percent provided no answer. Additionally, 81 percent of the home care aides were able to provide accurate information when asked to list something they had learned as a result of the training; 19 percent of the respondents provided no answer. Results for things learned from the training showed that 41 percent mentioned something related to disease knowledge and the risk for exposure to HIV, Hepatitis B, or Hepatitis C; 39 percent provided information related to safety/protection knowledge, such as the need to use universal precautions and personal protective equipment at all times; 7 percent provided information related to sharps protection and the need for proper sharps disposal; 13 percent listed other topics (Figure 4).

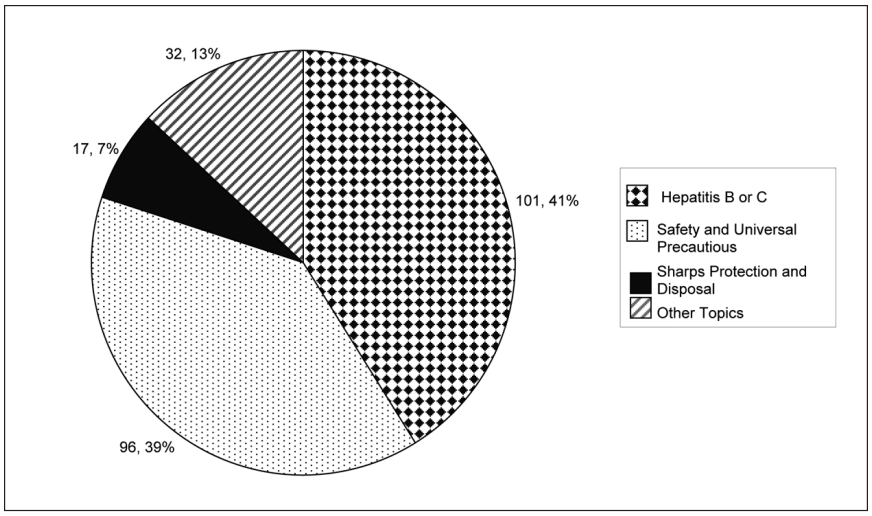

Figure 4. Individual home care aide responses as to what was learned in modified small group training exercises.

For the two English-speaking training sessions where the head, hands, heart evaluation took place, 642 home care aides formed 42 groups, each of which provided responses about what they learned, what they will do differently, and how they felt about the training. In these groups, there were 146 "head" responses to what the home care aides learned, 77 "hands" responses to what the home care aides will do differently as a result of the training program, and 82 "heart" responses to how the home care aides felt. Of the 146 responses on what was learned, 32 percent were related to the use of universal precautions and personal protective equipment; 28 percent were related to risk for exposure to blood, HIV, Hepatitis B, or Hepatitis C; 14 percent focused on being more aware of occupational hazards in the workplace; 9 percent identified the importance of sharps containers and proper disposal; and 18 percent provided other responses (see Table 1). There were 77 responses reporting what aides will do differently. Seventy-four percent of responses were related to the usage of universal precautions at all times while working; 19 percent focused on proper sharps disposal; and 6 percent covered other issues (see Table 1). For the 82 responses on how the aides felt, 56 percent said they would be more considerate and talk to their clients about hazards in the home; 30 percent said they would take more steps to ensure their health in the workplace; 11 percent suggested that the modified small-group training on blood and body fluids exposure should be given to all home care aides; and 13 percent provided other responses (see Table 1).

Table 1. Results from the Head, Hands, Heart Evaluation (43 groups, 305 total responses)

	Number of responses	Percent of responses
What the home care aides learned from the training (HEAD), 146 Responses		
Use of universal precautions and personal protective equipment	47	32%
Risk for exposure to blood, HIV, Hepatitis B or Hepatitis	41	28%
Being more aware of occupational hazards in the workplace	20	14%
Importance of sharps containers and proper disposal	13	9%
Other	25	18%
What the home care aides will do differently (HANDS), 77 Responses		
Usage of universal precautions	57	74%
Proper sharps disposal	15	19%
Other	5	7%
How the aides felt about the training (HEART), 82 Responses		
Related to being more considerate and/or talking to their clients more about hazards in the home	38	56%
Will take more steps to insure their health in the workplace	24	30%
Suggested that the training be given to all home care aides	9	11%
Other	11	13%

Intervention Tools

In evaluating the intervention tools, 750 (73 percent) of the 1027 home care aides who participated in the English-speaking session completed the follow-up questionnaire. Of these individuals, 282 (38%) stated they had a client in need of sharps containers. Additionally, 91 percent of all 750 respondents believed the information card was useful; 90 percent believed the sharps safety magnet was useful; 83 percent believed their clients would post the sharps safety magnet; and 87 percent felt the sharps safety magnet would help them in talking to their clients about proper sharps disposal (see Table 2). An analysis comparing

home care aides who had clients in need of sharps containers to those who did not have clients in need of sharps containers found that those who had clients in need of sharps containers were more likely to rate the information card as useful ($p = .0005$), the sharps safety magnet as useful ($p = .04$), and the probability that their clients would post the sharps safety magnet ($p = .006$) at statistically significantly higher levels, although this response for both groups was high (see Table 2).

DISCUSSION

The results from the short training evaluation questionnaire and from the head, hands, heart evaluation demonstrate that the majority of home care aides surveyed preferred the adapted small-group dialogic program to the typical lecture-style trainings. The home care aides were able to effectively articulate facts they learned related to blood and body fluids exposure during the trainings, with less than 2 percent providing inaccurate information. The inaccurate information provided by home care aides primarily consisted of an erroneous belief that they need to be made aware of their clients' HIV status.

For the intervention tools, there was also an overall approval rate of 90 percent. For the target population of home care aides with clients who used sharps, the approval rate was overwhelmingly high at 97 percent (see Table 2). The use of peer educators to deliver small-group training activities requires some additional resources in terms of advance training and the preparation of user-friendly

Table 2. Workers' Assessment of Intervention Tools

	Total ($n = 750$)	Aides with clients using sharps ($n = 282$)	Aides without clients using of sharps ($n = 468$)	p-Value
Usefulness of the information card	686 (91%	273 (97%)	413 (88%)	0.0003
Usefulness of the sharps safety magnet	676 (90%)	262 (93%)	414 (88%)	0.0444
Clients post the sharps safety magnet	628 (84%)	253 (90%)	375 (80%)	0.0056
Sharps safety magnet would help them in talking to their clients	649 (87%)	254 (90%)	395 (84%)	0.0983

curricular materials, as well as providing hands-on materials for group activities. Such hands-on training is a hallmark of union apprenticeship and professional training programs, and should be a standard requirement for occupational safety and health training. A variety of curricular materials have been developed through publicly funded educational development grants and are freely available through governmental and academic websites.

A limitation of this process evaluation is the lack of baseline information on the home care aides' knowledge of the information covered in the training program. It would also be important to better characterize the capabilities of worker trainers before and after the sessions, and to ask them if they guided or discussed work practices with fellow union members after the training. Additionally, we did not have the opportunity to follow aides prospectively to document their use of the tools in the home care environment. This study is also limited in that it did not directly compare the effectiveness of small-group participatory training with the outcomes from standard lecture format, since the large-group lectures had not been subjected to the same evaluation.

CONCLUSIONS

The findings in this process evaluation illustrate the usefulness and effectiveness of the interactive training program and intervention tools developed in generating worker interest and intent to change. This project demonstrates the feasibility and benefit of engaging home care workers as trainers. In addition, this project provides evidence of the feasibility of reaching a highly dispersed and overall difficult-to-reach population through a tripartite collaboration among employers, union and academic partners. This process evaluation also demonstrates that interactive education training programs and tools can be utilized as strategies to counter the methods and passivity fostered in large-group training setting. The union acted on the needs of members for more voice and interaction in the mandatory workplace training, particularly for home care workers who receive minimal pre-service training. Despite an absence of state funding for educational mandates, which typically results in unsatisfactory lecture formats, our partnership created effective participatory learning activities on a scale not documented heretofore. The policy promoted here requires true partnership with workers at every stage from curriculum planning through peer educational delivery. Unfortunately, in the absence of widespread unionization, this is not often available to personal care attendants.

Intervention effectiveness studies that directly compare standard training to participatory training are needed. This study suggests that participatory training can be offered with limited additional resource expenditure. Our partnership took the challenge of the large-group training arrangement, brought about by minimal resources provided by the state-funded program, as an opportunity to maximize worker participation in the creation, delivery, and evaluation of the

curriculum. While worker training efforts have traditionally been short-changed and are a critical element for safety and health, a direct comparison of the large-setting training provided in this study to small-group training for both process and outcome measures would be useful. Especially where peer-education with union members is an option, there may be advantages as well as disadvantages to large room sizes. Additional studies that measure intervention effectiveness are needed for all forms of training. This study suggests that participatory training can be offered with limited additional resource expenditure and with excellent worker participation and knowledge acquisition in the context of active union representation and a functional labor-management safety committee. If confirmed, these findings suggest that regulatory training requirements should include participatory peer education components, and that training requirements can be expanded in a cost-effective manner.

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