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Comparing Person Centered Communication Education in Long Term Care Using Onsite and Online Formats

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Abstract

Purpose—Educating nursing home (NH) staff to provide person-centered care is complicated by scheduling, costs, and other feasibility issues. This study compared outcomes for an in-service program focused on person-centered communication provided in onsite and online formats.

Methods—The Changing Talk program was provided onsite in 7 NHs (327 staff). The online program included 8 NHs (211 staff). Outcomes were compared between groups.

Results—ANOVA revealed an interaction between format type and pre/post-test scores with improved recognition of person-centered communication in the onsite group only. Group program evaluations based on the modified Diffusion of Innovation in Long Term Care Battery indicated no significant differences between training formats.

Conclusions—Staff's perception of the program was similar; and statistically significant gains in post-test scores indicating for awareness of person-centered communication for the onsite group have limited clinical significance. Feasibility and effectiveness are important considerations for in-service education supporting NH culture change.

Providing effective in-service education to nursing home (NH) staff is essential to equip staff with the new skills needed to support person-centered long term care (LTC). However, NH staff training is complicated by factors including scheduling challenges, costs, and other feasibility issues that may interfere with in-service education. New methods to deliver education including computer-based and online formats may streamline the process; however, it is necessary to test their effectiveness compared to traditional presentation formats.

Culture change is a critical goal for improving LTC and includes educating staff in fundamental aspects of person-centered care including hearing the resident's voice and honoring their preferences and choices. Education is essential to assist staff in breaking habits and working differently if care is to be truly resident directed. Culture change may require lengthy training processes including ongoing education to launch and sustain the desired change. On this journey, all culture change activities require a tremendous amount of time and education commitment (Doty, Koren, & Sturla, 2008).

In-service education promoting culture change in LTC must also reach a variety of health care workers, including certified nursing assistants as well as licensed staff. Research is needed to determine what formats will be effective for staff across levels of education and expertise (Banazak, Mickus, Averill, & Colenda, 2000).

Presentation formats for in-service education have expanded rapidly with the availability of new technologies. Continuing education offerings have moved from on and off-site didactic classes or presentations at conferences; to home study, journal offerings, computer programmed learning, eLearning, and webinars (Bluestone et al., 2013; de Godoy, Costa Mendes, Hayashida, Nogueira, & Marchi Alves, 2004; Karaman, 2011). Online learning has gained popularity due to its convenience and flexibility, and cost-effectiveness (Karaman, 2011). Yet despite all the available formats for in-service education, little research has compared effectiveness in relation to costs of in-service education provided in different formats (Bluestone et al., 2013).

The goal of this study was to evaluate the feasibility of providing an interactive communication training program to NH staff in a synchronous online format and to compare learner outcomes between the online and traditional onsite versions. Although a recent integrative review of literature on effective in-service education failed to find support for group training (Bluestone et al., 2013), the intervention, like traditional in service education programs, utilizes a group presentation format. It was hypothesized that the online program would reach greater numbers of nursing home communities and staff, at reduced cost. It was also hypothesized that the online format would limit interactional features of this group educational program and might be less effective. Information from this study may inform future provision of continuing education to NH staff.

METHODS

The Changing Talk (CHAT) communication training intervention was developed to improve communication awareness and skills for person-centered care that honors older adult residents' preferences and choices. For example, reducing the use of elderspeak (infantilizing communication) promotes resident dignity and improves care (Williams, Kemper, & Hummert 2004). CHAT was provided to staff in their NH communities as an intervention to reduce resident resistiveness to care. All levels of direct care staff were invited to participate. For comparison, we tested CHAT provided to other NH communities using a web conferencing system, connecting with multiple communities in an interactive forum over the internet. The presentations, presenters, and handouts were consistent between

groups. Participant program evaluations and pre and post-test outcomes were compared between groups for the two presentation formats.

SAMPLE

A regional chain of not-for-profit, Christian based NHs was recruited for the study. The study was approved by the University IRB, the Corporate Chain, and by individual administrators in each NH. A total of 16 Kansas and Missouri NHs were recruited. One NH declined due to having additional research activities underway. Participating homes were assigned to receive onsite (n= 7) or online (n=8) training based on their distance from three research centers. Those more distant from the research centers were assigned to online training. Table 1 compares characteristics of the the nursing home communities participating in the online and onsite groups on size, presence of a special care unit, community type (rural or urban), star ratings from Medicare's Nursing Home Compare web site and Medicaid Case Mix. Medicare.gov posts a summary of quality ratings for nursing homes based on inspection results, staffing data, and quality measure data. Ratings can range from 1 to 5 stars. Medicaid case mix is a measure of resident acuity or care needs that is used to determine Medicaid reimbursement rates (Harrington & Swan, 2003; Zimmerman, et al., 2005).

A total of 211 staff in 8 homes participated in the online CHAT communication training program. The 3 CHAT sessions were provided over interactive television in their NH community once weekly over three weeks. Not all participants attended all sessions. Seven NHs participated in CHAT onsite. The CHAT program was made available to all staff in these communities with each of the three sessions offered multiple times in one week on several shifts to accommodate staff schedules. Staff (n=327) attended on paid time, although some had to attend outside their normal work hours. Not all participants attended all sessions.

Descriptive information about the online participants and the number of sessions each attended is limited. A subset of the participants who were in the onsite group also participated in additional research related to the intervention outcomes. Descriptive information about this group is provided in Table 2. Ninety-five percent of participants were certified nursing assistants and ranged in age from 20 to 69 years (M = 36). They had an average of 11 years of experience in health care (range .25 to 46) and had worked in the current NH for 1 month to 31 years (M = 4.5 years).

INTERVENTION

The Changing Talk (CHAT) communication training is intended to assist attendees in identifying effective and problematic communication that occurs in LTC environments. The training uses video clips and discussion to illustrate and evaluate different staff communication styles and how they impact the behavior of the residents. CHAT features an interactive format with limited didactic information. Participants observe recordings from nursing homes and critique and discuss, correct, and role play effective communication from the videos. Staff attended sessions (virtually or in person) in their NH community. To facilitate interaction from staff participating in the online CHAT program, the presenter used

a rotation system of calling on each location so that all communities were able to see and hear responses of each other. The program is described in detail elsewhere (Williams et al., 2004).

MEASURES

A pre-post test was used to assess knowledge gain of participants in the CHAT training. Participants watched a video of a staff-resident interaction recorded in an actual NH and individually rated staff communication appropriateness. After the last session, each participant again rated the same clip. The rating sheet assesses the staff's ability to identify elderspeak, and other appropriate and inappropriate communication practices. Two five-point Likert scales that assess the overall effectiveness and appropriateness of communication and 10 yes/no questions measure identification of elderspeak (patronizing communication). Possible scores on the measure range from 2 to 20 with higher scores indicating increasing awareness of person-centered communication.

A revised version of the Duke Diffusion of Innovations in Long Term Care Battery (DOI-LTC) (McConnell et al., 2012) assessed staff perceptions of the communication practices taught in CHAT and the perceived likelihood that they would use the skills in practice. The revised DOI-LTC scale includes 20 items in four subscales, each rated on a six-point rating scale. Subscales in this tool include ratings of relative advantage, complexity and compatibility with current care practices, ability to observe new practices and effect on image, and organizational support for the innovation. This program evaluation was completed at the end of the final session. Participants in each group (online and onsite formats) completed the measures anonymously.

ANALYSES

Data were entered in a separate excel file for each measure. A second data entry check was completed on 10% of the sample to assure accuracy. There was no missing data.

Descriptive data was tabulated in SPSS for initial comparisons of pre and post-training scores for Communication Rating and also for the Diffusion of Innovation measure completed at the end of the program. Pre and post-intervention communication ratings were compared using analysis of variance. Four pair-wise comparisons were made (two between-group comparisons at pre and at post and two within-group comparisons pre-post). Pairwise comparisons were conducted for follow-up of significant interactions. T- tests were used to compare between group participant responses on the Diffusion of Innovation measure.

RESULTS

The communication rating (identification of inappropriate communication) mean post-test scores improved 2.5 in the onsite participants, but declined by .8 in the online group. The means and standard deviations for the communication ratings are presented in Table 2. A 2×2 ANOVA was conducted in SPSS to evaluate the effects of two types of CHAT training conditions, an onsite presentation format and an onsite presentation format on the communication ratings from pre-test to post-test. A repeated-measures ANOVA was not

appropriate since specific attendees were not identified at each session and could not be paired for analysis. Assumptions for the ANOVA were met and no outliers were noted.

The results for the ANOVA indicated no significant main effect for training format, $F(1, 358) = 3.64, p = .057$, partial $\eta^2 = .01$; and no significant main effect for pre/post-test scores, $F(1, 358) = 3.28, p = .071$, partial $\eta^2 = .01$. However there was a significant interaction between training format and pre/post-test scores, $F(1, 358) = 12.52, p < .01$, partial $\eta^2 = .034$ (graphed in Figure 1).

Follow up tests were conducted to evaluate the pairwise differences between the means and a Bonferroni correction was used to control for error. A significant increase in the accuracy of communication ratings was found from pre to post for the onsite training format indicating the attendees increased in their ability to identify person centered communication after the onsite training group ($t = -6.01, p < .01$). No significant differences were found from pre to post for the online training ($t = 1.00, p = .32$). The difference between onsite and in person pre-test scores ($t = -1.2, p = .22$) was not significant, however, there was a significant difference between the post-tests scores indicating a greater improvement in identification of person-centered communication for those attendees that participated in the onsite training ($t = 3.62, p < .01$).

T-tests were conducted to compare group ratings of likelihood of translation to practice using total scores on the DOI-LTC and the four subscales. The mean and standard deviations can be seen in Table 3. No significant differences were observed indicating similar levels of evaluation of the likelihood of using learned skills in practice for participants in both the onsite and online format groups.

Cost for providing CHAT in the two formats were tabulated and are reported in detail elsewhere (Williams & Herman, Manuscript in preparation). Costs per onsite session ranged from \$25 to \$55 dollars including wages for staff attendees, handouts, and facilitator costs. Interventionist costs are greatly reduced in the online version of CHAT, since the same facilitator reached all eight NH communities simultaneously.

DISCUSSION

Staff's perception of the intervention was similar; however, pre and post-test scores indicated improvement in recognizing person-centered communication in the onsite presentation group only. These findings support recent evidence about design and delivery for effective in-service education from a recent integrative literature review (Bluestone et al., 2013). Both onsite and online formats featured interaction and used the same case-based vignettes to illustrate and practice application of improved communication. Repetition of key concepts and application across 3 sessions was also used and has been identified as an effective delivery method. CHAT also uses a team-based approach with posited effects of peer group discussion.

Despite statistical significance, the clinical significance of differences in post-test scores (2 point gain versus 0.8 point decrease) has limited clinical significance. Statistical significance indicates the chance of detected differences, not the clinical relevance of differences between

groups (Friedman, 2005). For example, reduction in systolic blood pressure by 3 to 4 mm. Hg. may be statistically significant. However, such a minor reduction is not considered clinically meaningful in treating an individual with hypertension. Erroneously concluding that statistically significant results are also of clinical importance is common, as reflected in a review of 43 clinical trials on exercise therapy for chronic low back pain. Although 43% reported statistical significance, only 16% were deemed clinically significant in reducing pain and increasing function (van Tulder, Malmivaara, Hayden, & Koes, 2007). Clinically significant differences for nursing staff educational interventions have not been determined. However, given the increased cost and other challenges to presenting in service education onsite, a 2.8 point difference between online and in person presentation format outcomes is minimal and likely not clinically meaningful. Instead of focusing on the statistical results, clinicians should focus on identifying components of the in person training that support effectiveness and incorporating those into online delivery.

Although the online group failed to demonstrate gains in the ability to critique a staff-resident interaction after training, this may be related to constraints on interaction in the online format. In ongoing online training, it may be helpful to have a site leader who would lead discussion, critiques, and role-play within individual nursing home communities to promote increased interaction. Online learning has been found to be as effective as traditional presentation formats when interactive. In addition, this study was limited to evaluating the intervention provided in a specific synchronous online format.

Another explanation for the lack of pre to post-test improvement in the online group and a limitation of the study was potential lack of attendance at all sessions that was not tracked in the online format group. For those staff who attended only one of the three sessions, any change in pre and post-test scores may have been due to testing and retesting, not the intervention. In addition, our failure to collect demographic information for all onsite and online participants limits the ability to make comparisons due to potential unrecognized differences in these groups. Each of the three CHAT sessions was only offered once, so staff in the online communities had less opportunity to attend. Although participants attended on paid work time, they may have had to do so outside or in addition to their normal work schedule or in addition to their work duties. This information was not tracked or controlled. Licensed staff received continuing education credits for attendance and this incentive may have promoted attendance.

The study didn't evaluate whether the staff in each group actually implemented new skills in practice, a critical outcome or whether this improved care for NH residents (O'Malley, Perdue, & Petracca, 2013). Ongoing research should evaluate use of enhanced communication by staff in practice using techniques such as psycholinguistic and behavioral coding and qualitative analyses of communication (Williams, 2006; Williams, Herman, Gajewski, & Wilson, 2009; Williams, Kemper, & Hummert, 2003).

Evaluation of the likelihood that staff will use learned skills in practice is an important consideration considering the challenge in translating research findings into practice. Clinicians and researchers alike must be aware of factors facilitating or limiting use of new knowledge and skills in practice by bedside clinicians. Data from participants indicated that

the skills learned in the CHAT program are compatible with use in practice and that ratings on all subscales were in the top quartile of each scale's range. Staff reported the skills were advantageous and compatible with their current work practices and also noted administrative support for improving communication and that changes would be readily observed as reflecting quality of care, dignity and honoring resident preferences, provided in their NH community. These data were completed by all levels of staff, predominantly nursing assistants who actually provide the most direct care. Although the Diffusion of Innovation Scale was not designed for nonprofessional providers, application in this population was successful in this study.

NH staff development coordinators and providers are charged to provide pertinent information to keep staff up to date on current practice, including skills for culture change. Careful consideration as to the audience and the pros and cons for different modes of presentation of education is needed. Indeed constraints of the busy NH environment provide critical challenges to effective in-service education. Evaluation of approaches in relation to other factors such as cost and feasibility are needed to provide the highest quality of education and training that will reach the most staff and contribute to improved quality of care. Establishment of guidelines for would be a helpful resource (Banazak et al., 2000).

Staff perceptions of the CHAT program's utility and likelihood for translation into practice are similar in both formats. The greater improvement in the post test ability to recognize in appropriate communication in the onsite format, although statistically significant, has limited clinical significance. Multiple formats for presentation of an intervention may be necessary for ease and practicality of dissemination; however, differences in the format may change active components of the intervention. One of the active ingredients for the CHAT intervention may be the interactive nature of the face-to-face discussion. Future testing will assess the active ingredients of the intervention as well as the effectiveness of different formats.

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Figure 1.
The interaction between training format and pre/post-test scores.

Table 1

Comparison between Nursing Homes in Online and Onsite Groups

Measure	Onsite (n=7 NHs)	Online (n=8 NHs)
Number of Residents	Mean = 76	Mean = 50
Special Care Unit Present	55%	13%
Location		
Metropolitan	29%	25%
Micropolitan	71%	50%
N/A (not specified)	0%	25%
Star Rating (possible range 1–5)	Mean = 4.3	Mean = 4.75
Medicaid Case Mix Mean(range)	1.0(.92–1.05)	0.97(.8–.15) **

* The U.S. Office of Management and Budget (OMB) defined and delineated 388 metropolitan statistical areas (MSAs) and 541 micropolitan statistical areas (μSAs) in the United States and Puerto Rico. A metropolitan statistical area has at least one urban core with a population of at least 50,000. In a micropolitan statistical area, the largest urban core has a population of at least 10,000 but less than 50,000. No data were available for communities listed as N/A.

** Data missing for four nursing homes located in a state that does not require this data.

Table 2

Description of Subset of Participants

Variable	Category	Frequency	Percent
Race	White	36	80.0
	African American	7	15.6
	Asian	1	2.2
	Native American	1	2.2
Ethnicity	Non-Hispanic	36	80.0
	Hispanic	9	20.0
Gender	Male	8	17.8
	Female	37	82.2
Education	High School	22	48.9
	College	23	51.1
Job Title	CNA	26	57.8
	RN	2	4.4
	CNA plus other (CMA/CRA)	17	37.8
Job Type	Aide	43	95.6
	RN	2	4.4
Number of Training Sessions Attended	1	2	4.4
	2	13	28.9
	3	24	53.3

Table 3

Pre and Post-test Score Comparisons.

Measure	Pre-Intervention M(SD)	Post-Intervention M(SD)	Max
Communication Rating Sheet			
Onsite	21.3(3.5)	23.8(3.5) ^{*a}	30
Online	22.1(3.0)	21.3(3.7)	30

^{*}
 $p < .01$ ^a
 $p < .01$

Table 4

Diffusion of Innovation Scale and Subscale Ratings.

Measure	Onsite M(SD)	Online M(SD)	Max
DOI-LTC	99.8(9.7)	97.1(12.0)	120
Relative Advantage	38.1(4.2)	37.3(4.3)	42
Complexity and Compatibility with Current Work Practices	24.9(5.4)	23.4(5.9)	36
Observability and Effect on Image	16.4(1.8)	16.3(2.1)	18
Organizational Support for Innovation	20.3(2.8)	20.2(3.2)	24