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Resourcefulness Training for Dementia Caregivers: Establishing Fidelity

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Abstract

Providing care for an elder with dementia can produce extreme stress that adversely affects caregiver health. Learning to be resourceful, which involves practicing resourcefulness skills using a journal or voice recorder, may reduce caregiver stress. However, before testing the effectiveness of journaling and voice recording as resourcefulness training (RT) practice methods, intervention fidelity should first be established. This pilot trial with 63 women dementia caregivers examined the fidelity of journaling and voice recording and whether allowing a choice between the methods affected RT intervention fidelity. Following RT, Resourcefulness Scale scores were similar for journal and recorder methods but higher for caregivers in the choice versus random condition. Patterns of RT skill use documented in journals or recordings were similar for choice and random conditions and for journal and recorder methods. The results support the implementation fidelity of RT that allows caregivers to choose a method to reinforce their resourcefulness skills.

Family members provide 85% of unpaid, informal caregiving to older adults in the United States (Gitlin & Schulz, 2012). According to the Alzheimer's Association (2015), family caregivers of persons with dementia provided approximately 17.9 billion hours of care annually, worth \$217.7 billion, which is nearly equal to the medical and long-term care costs for persons with dementia. Two thirds of informal caregivers are women, and 34% of them are 65 years of age and older (Alzheimer's Association, 2015). The Family Caregiver Alliance (2001) notes that these female caregivers expend 50% more time providing care than male caregivers. The effects of caregiving on the health and well-being of women caregivers are significant. Of particular concern is the mental health of women caring for family members with dementia. These women experience higher levels of depression and anxiety than non-caregiving peers (Cannuscio et al., 2002; Albert, Schulz, & Colombi, 2010). Further, the negative effects of caregiving on mental health are compounded by caregivers' decreased participation in social and work activities leading to social isolation and low social support (Alzheimer's Association, 2015).

Researchers have developed and tested many interventions for dementia caregivers, including some that focus on promoting / preserving mental health. For example, NIH-funded researchers have engaged in the multi-site projects, such as the well-known Resources for Enhancing Alzheimer's Caregiver Health (REACH) study, since 1995 (Gitlin, Belle et al., 2003; Schulz et al., 2003; Wisniewski et al., 2003; Belle et al., 2006; Hebert, Dang, & Schulz, 2007; Elliot, Burgio, & Decoster, 2010; Basu, Hochhalter, & Stevens, 2015). The primary goal of REACH projects was to develop and test methods for helping family caregivers manage daily activities and the stress associated with dementia caregiving. REACH projects have tested educational support groups (Burgio, Stevens, Delois, Roth, & Haley, 2003), behavioral care (Burns, Nichols, Martindale-Adams, Graney, & Lummus, 2003), training programs (Chee, Gitlin, Dennis, & Hauck, 2007), family-based interventions (Eisdorfer et al., 2003), environmental modifications (Gitlin, Hauck, Dennis, & Winter, 2005; Gitlin, Winter et al., 2003), and computer-based information and communication services (Eisdorfer et al., 2003; Mahoney, Tarlow, & Jones, 2003).

All of the interventions were found to be superior to control conditions for women and for caregivers with low level of education. Positive outcomes included fewer depressive symptoms, less anxiety, better adaptation, greater satisfaction, increased sense of well-being, and fewer problem behaviors in care recipients (Burgio et al., 2003; Burns et al., 2003; Chee et al., 2007; Eisdorfer et al., 2003; Gitlin et al., 2005; Gitlin, Winter et al., 2003; Mahoney et al., 2003; Elliot et al., 2010). Researchers have identified a need for interventions to assist dementia caregivers to seek out and mobilize social resources while also developing personal coping strategies (Nolan, Ingram, & Watson, 2002). However, while the REACH trials provided many positive findings, the interventions tested did not include teaching resourcefulness skills.

Research shows that resourcefulness skills can be taught successfully (Zauszniewski, Eggenschwiler, Preechawong, Roberts, & Morris, 2006; Zauszniewski, Bekhet, Lai, McDonald, & Musil, 2007; Zauszniewski, Musil, Burant, & Au, 2014) and may be effective in reducing dementia caregiver stress. Teaching resourcefulness skills integrates principles of adult learning, including active participation in the teaching-learning process (Russell, 2006). In addition, practice is used to reinforce the learning (Russell, 2006), promote skill retention, and achieve more long lasting, sustained effects (Suhl & Bonsignore, 2006; TenHave, Coyne, Salzer, & Katz, 2003).

Intervention fidelity

Assessment of fidelity is essential to the establishment and evaluation of any intervention and is particularly important for psychosocial/behavioral interventions (Santacroce, Maccarelli, & Grey, 2004) such as Resourcefulness Training (RT) for caregivers of persons with dementia. However, assessing fidelity requires defining fidelity and selecting methods and measures that are consistent with that definition. Nelson Nelson, Cordray, Hulleman, Darrow, and Sommer (2012) have noted wide variation in definitions used and suggest that all too often fidelity measurement focuses only on study design, the training of those providing the intervention, and the consistency with which an intervention is implemented. This approach limits assessment of the processes occurring between intervention

implementation and outcome assessment. It also leaves assessment of the intervention to researchers, intervention providers (e.g., Horn, Dino, Hamilton, Noerachmanto, & Zhang, 2008), or observers (e.g., Hogue et al., 2008).

A growing number of researchers are recommending including a focus on the recipients of the intervention (Nelson et al., 2012; Gearing et al., 2011; Bellg et al., 2004). They note that when an intervention is designed to produce new behaviors/skills on the part of a particular population, it is critical that intervention fidelity evaluation also include an assessment of how the intervention was received and used. The way in which study participants receive the intervention will influence their comprehension and their implementation of the skills taught (Bellg et al., 2004; Borelli et al., 2005; Zauszniewski, 2012a). Thus, in evaluating intervention fidelity, it is important to measure how recipients receive the intervention and implement expected skills on a daily basis (Dusenbury, Brannigan, Falco, & Hansen, 2003).

The National Institutes of Health Behavior Change Consortium (NIHBCC) has identified five study aspects that are important to fidelity intervention: study design, provider training, treatment delivery, receipt of treatment and enactment of treatment skills (Bellg et al., 2004; Nelson et al., 2012). Michie (2005) has suggested that the last two aspects, receipt and enactment, should be considered as responses to the intervention that are influenced by first three: study design, provider training and intervention delivery. Measuring receipt and enactment as part of intervention fidelity assessment can enhance understanding of the processes that occur between actual implementation of the intervention and final outcomes, as advocated by Nelson and colleagues (2012). Thus, Essok, Covell, Shear, Donahue, and Felton (2006) support the inclusion of intervention fidelity assessments by recipients, although they recognize that such assessments are often underutilized despite being cost-effective.

This pilot study used the NIHBCC definition of intervention fidelity with an emphasis on recipients' responses (receipt and enactment) and developed strategies to measure these two components. Receipt of an intervention that includes a teaching component is typically assessed by pre- and post-test quantitative measures (Gearing et al., 2011; Zauszniewski, 2012a). The limitation of this strategy is that it does not assess utility or retention. Robb, Burns, Docherty, and Haase (2011) recommend the development of strategies that effectively assess whether recipients have understood the intervention and are applying the skills taught in real-life situations. Kolb's Theory of Experiential Learning (Kolb & Kolb, 2005) suggests that in order for learning to actually occur, it is important for learners to reflect on their learning experience (intervention) and their opportunities for applying the new knowledge. Examining these processes over time enables researchers to assess the enactment dimension of intervention fidelity. Qualitative data are particularly useful in examining processes. Thus, in the study reported here, both quantitative and qualitative strategies were used to assess the receipt and enactment dimensions of the fidelity of Resourcefulness Training (RT) among caregivers of individuals with dementia.

Active participation in an intervention has been found to decrease caregiver burden and depression, improve caregiver well-being and decrease behavior problems in care recipients (Pinquart & Sorensen, 2006). Allowing caregivers to choose a preferred method for

reinforcing the skills may enhance their participation in the intervention and their satisfaction (Suhl & Bonsignore, 2006). Yet, allowing caregivers to choose the method for reinforcing skills could also introduce bias into the research design, compromising scientific rigor (TenHave et al., 2003).

Therefore, this pilot intervention trial of women dementia caregivers evaluated receipt and enactment of resourcefulness skills training and the equivalence of two methods of reinforcing these skills, daily journaling versus daily digital voice recording, as well as the effects of random assignment versus choice of practice / reinforcement method. Zauszniewski's theory of resourcefulness and quality of life (2012b) informed the development of the RT intervention, and her model for examining critical parameters of interventions (2012a) was used to examine the fidelity of the intervention from the perspective of intervention recipients.

We sought to determine whether one method of practicing / reinforcing RT (journaling or digital recording) was superior to the other in increasing personal and social resourcefulness skills in caregivers over time. In addition, we explored whether outcomes differed between randomly assigning caregivers to one of the practice / reinforcement methods and allowing the caregivers to choose between the two methods. Finally, we looked at whether these caregivers described in their journals or digital recordings, use of the resourcefulness skills they were taught, providing evidence of intervention receipt and enactment.

Methods

Design

The study involved a convenience sample of 63 women caregivers who were currently providing care to an elder with dementia. All of them were taught the skills constituting resourcefulness. The method they used to practice and reinforce the resourcefulness skills, a necessary component of the RT intervention, was randomly determined. Thirty-two women were randomly assigned to either journaling or digital voice recording, and 31 women were randomly assigned to a choice condition in which they were given a choice between the journal or the digital recorder. There were 16 caregivers in the randomly assigned RT with journal and RT with recorder conditions, 20 in the RT with journal by choice condition, and 11 in the RT recorder by choice condition (Figure 1). Caregivers completed quantitative measures before RT and at 2 and 8 weeks post-RT. These measurement intervals are consistent with previous studies of the RT intervention in other populations (i.e., Zauszniewski, Musil, Burant, & Au, 2014).

Sample

Approval for the study was obtained from the University Institutional Review Board. Caregivers were recruited through flyers posted in the community and in, support groups, and through referrals from other caregivers in Cuyahoga County, Ohio. To be included in the study, the caregiver had to be currently providing care for an elderly person with dementia in the same household for at least 6 months. The sample of 63 women caregivers was considered sufficient for descriptive analyses and repeated measures analysis of variance to

compare the two practice / reinforcement methods (irrespective of random or choice condition) and to compare the random and choice conditions (regardless of practice / reinforcement method). Using a repeated measures analysis of variance with within-between interaction, 3 repeated measures, 2 groups (either random versus choice or journal versus recorder), alpha of .05, we determined that the sample size of 63 caregivers would yield a power of .80 for detecting differences within groups with a minimum effect size of .16 using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007). For the qualitative analyses, the sample included 59 caregivers because of illegible or inaudible data in journals (n=2) or recordings (n=2).

Interventionist training and supervision of delivery

The RT interventions were provided by four graduate nursing or social work students who were trained and supervised by the principal investigator and project manager. Two interventionists provided the RT with journaling to caregivers in both the random and choice conditions, while two others provided the RT with digital recorder to those in both conditions. The interventionists were taught the RT skills during a two hour session using a training manual that specified the content of the RT, including the eight skills to be taught, discussed, and reviewed with each caregiver, and the reinforcement method to be used - either journaling or digital recording. To ensure the interventionists followed the RT protocol, checklists with the objectives and content were reviewed with interventionists to ensure that all aspects of the training were completed after each caregiver training session. If protocol deviations were detected during the supervision sessions, the interventionists would have been re-trained. However, this was unnecessary in the study reported here.

Resourcefulness Training Intervention

The skills constituting personal and social resourcefulness were taught to all 63 women caregivers by a trained interventionist in a single 40-minute session. At the training session, each caregiver received a 3x5 inch laminated card on which the eight resourcefulness skills were printed. Within the eight skills, the first three are social resourcefulness (i.e., help-seeking) skills that include relying on family and friends, exchanging ideas with others, and seeking professionals and experts. The other five skills are personal resourcefulness (i.e. self-help) skills that include organizing daily activities, using positive affirmations, reframing, changing from usual response, and exploring new ideas. During the session, the eight resourcefulness skills are discussed individually and caregivers are encouraged to identify ways in which each of them might be applied within their individual caregiving situations. After teaching the skills, the interventionist explained daily use of a written journal, recommending 3–5 pages per day, or daily use of a digital voice recorder, recommending 5–7 minutes per day, depending on the condition to which the caregiver was assigned, either randomly or by choice. Caregivers were asked to review the laminated card each day before journaling or recording, and to reflect on the resourcefulness skills they had learned and used during the 4-week intervention period. Reflection on their practice/use of the resourcefulness skills served as a mechanism for reinforcing resourcefulness skills.

Measurement of Intervention Fidelity

Data were collected during three face-to-face, structured interviews spaced 6 weeks apart (at baseline and at 2 and 8 weeks post-intervention) and from written journals and digital voice recordings used during the intervention. A demographic questionnaire was used to measure age, race/ethnicity, marital status, education, income, and number of health problems, from a checklist of ten health problems commonly experienced by women: heart disease, cancer, stroke, respiratory disease, diabetes, hypertension, osteoporosis, kidney disorders, mental disorders, and HIV/AIDS (U.S. Department of Health and Human Services, 2013).

The 28-item Resourcefulness Scale (RS; Zauszniewski, Lai, & Tithiphontumrong, 2006) was the quantitative measure used to evaluate the fidelity of the RT intervention. The RS consists of 16 personal resourcefulness and 12 social resourcefulness items, with responses on a 6-point scale ranging from extremely non-descriptive of one's behavior (0) to extremely descriptive (5). On the RS, total scores may range from 0 to 140, with higher scores indicating greater resourcefulness (Zauszniewski, Lai, et al., 2006). Scores on the personal resourcefulness subscale range from 0 to 80, and scores on the social resourcefulness subscale range from 0 to 60. Internal consistency estimates for the RS and subscales reflecting personal and social resourcefulness have been reported with Cronbach's alphas of .85, .83, and .79, respectively. Construct validity has been supported by confirmatory factor analysis verifying the presence of substantially correlated subscales reflecting personal and social resourcefulness ($r = .41$, $p < .001$). In this study, Cronbach's alpha for the RS was .81 and alphas were .72 and .78 for the personal and social resourcefulness subscales.

Fidelity of the RT intervention was also assessed from qualitative data obtained from the caregivers' journals and digital recordings. It was expected that if intervention fidelity was maintained, caregivers would name and/or describe the use of specific personal and social RT skills as they reflected on their implementation of the RT in caring for an elder with dementia. Use of RT skills was tracked over a 4-week period. The daily journaling or digital recording thus provided qualitative data on whether women caregivers used the skills they were taught and which ones they used most frequently.

Directed content analysis (Hsieh & Shannon, 2005) was used to measure receipt and enactment of the resourcefulness training. The trustworthiness of the data was ensured because data were provided directly by the caregivers in the form of written journals or digital recordings. Because the study design called for evaluation of the influence of the mode of reflection recording and choice in selecting that mode, all written and verbal reflections were initially transcribed verbatim by research assistants so that the researcher analyzing the content would be blind to the mode of reflection. This contributed to the trustworthiness of the analysis. The pre-established codes were the labels and descriptions of the eight RT skills.

All behaviors recorded on each individual record were highlighted and compared to these codes manually using a constant comparative process. If a particular behavior did not appear to readily fall within one of the selected codes, memos were written and discussion among the researchers occurred to determine whether the behavior reflected a subcategory of a

particular code or was simply an activity of daily living or a coping mechanism outside of the RT framework. No behaviors fell outside of the coding scheme. Once the directed content analysis was completed, practice / reinforcement method and random versus choice condition were noted and matrix procedures were applied to determine differences in skill use based on practice / reinforcement method and on random versus choice condition.

Results

Sample characteristics

Demographic characteristics of the sample of 63 women caregivers have been published elsewhere (Zauszniewski, Lekhak, Napoleon & Morris, 2016) and are summarized briefly here. All of the women were currently providing care for an elder with dementia in their home and were doing so for at least six months. The average age of the women caregivers was 57 ($SD = 12.99$) years and ranged from 50 to 66 years. More specifically, mean ages of the caregivers randomly assigned to the journal and recorder methods were 57.81 ($SD = 14.67$) and 55.94 ($SD = 11.35$), respectively. The mean age of caregivers who chose to use the journal was 58.6 ($SD = 15.25$) while the mean age of caregivers who chose the recorder was 57 ($SD = 8.84$) years. The four groups were not significantly different on age.

More than half of the caregivers (51%) were married and fairly well educated, with 45% having a college degree. More than half (54%) were Caucasian, 41% were African American. No significant differences in marital status or educational level were found in the four subgroups considered in the fidelity analysis reported here (Table 1). It was noted, however, that the women who chose to reflect in writing tended to be Caucasian, partnered, and with a college education, while those who chose digital recordings tended to be African Americans who were single or widowed.

Relevant to the analysis of fidelity of the RT intervention, it is important to note that none of the women caregivers were believed to have cognitive deficits based on the following: 1) their average health literacy scores ($M = 63.52$) on the 66 item Rapid Estimate of Adult Literacy in Medicine scale (Davis et al., 1993); indicating a very high level of health literacy; 2) the women reported an average of one health condition on a checklist of the 10 most leading health problems in women, including heart disease, cancer, stroke, respiratory disease, diabetes, hypertension, osteoporosis, kidney disorders, HIV/AIDS, and mental health problems (U.S. Department of Health and Human Services, 2013); 3) of the women who reported a concern with mental health ($N=6$), their average baseline score on the Center for Epidemiological Studies Depression scale ($M = 14.50$) did not meet the threshold for moderate to severe depressive symptoms (Radloff, 1977); 4) all 63 women caregivers were able to complete all aspects of the RT, including the training session, and journaling or voice recording; missing data was due to illegibility or inaudibility; and 5) interventionists did not report in their field notes any evidence of cognitive or learning deficits for any of the caregivers.

Comparisons of reinforcement methods and treatment conditions

Six, 3X2 (3 time points by 2 groups) repeated measures analysis of variance tests were conducted to examine differences between women caregivers who received RT with journaling and those who received RT with digital recording for practice / reinforcement and between women caregivers who were randomly assigned to a practice / reinforcement method and those who were given a choice. Mean scores for total, personal, and social resourcefulness from the RS were examined at the three measurement points (baseline and at 2 and 8 weeks post-intervention) (Table 2).

RT with journal versus RT with digital recorder

Repeated measures analysis of variance was used to compare the caregivers on practice / reinforcement method used with RT. Our goal was to determine whether the two methods had similar implementation fidelity. For this analysis, random assignment to practice / reinforcement method or choice of method were not considered. There were 36 caregivers in the RT with journal group and 27 in the RT with recorder group. In all repeated measures analyses, the test for sphericity was found to be significant, with Mauchley's W exceeding .75. Therefore, the Huynh-Feldt correction was applied (Huynh & Feldt, 1976; Field, 2013). This adjustment corrects for degrees of freedom (df) and makes the F-ratio more conservative; that is, the F statistic must be larger in order to be significant (Huynh & Feldt, 1976; Field, 2013).

Comparing caregivers who were in the RT with journal group with those in the RT with recorder group, irrespective of random assignment or choice, we found that mean overall resourcefulness scores varied significantly over the three time points ($F_{\text{Huynh-Feldt}}(df=1.74,106.17) = 34.51, p<.001$). Total resourcefulness (i.e. RS scores) increased over time but there were no significant differences in resourcefulness between caregivers in the RT with journal group and those in the RT with recorder group; also, the group by time interaction was not significant.

Women caregivers who were in the RT with journal group were then compared to those in the RT with recorder group on personal and social resourcefulness to obtain information on the fidelity of teaching resourcefulness skills using the two methods. For personal resourcefulness, mean scores varied significantly over the three time points ($F_{\text{Huynh-Feldt}}(df=1.80,110.03) = 19.86, p<.001$). Personal resourcefulness increased over time, but there were no significant differences in personal resourcefulness between women caregivers in the RT with journal group and those in the RT with recorder group; the interaction between group and time was not significant. For social resourcefulness, mean scores also varied significantly over the three time points ($F_{\text{Huynh-Feldt}}(df=1.73,105.67) = 30.52, p<.001$). Social resourcefulness increased over time, but there were no significant group differences in social resourcefulness between women caregivers in the RT with journal group and those in the RT with recorder group; the interaction between group and time was not significant.

Random versus choice conditions

Repeated measures analysis of variance was then used to compare women caregivers who were randomly assigned to RT with journal or RT with recorder with those who were given a

choice between the two practice / reinforcement methods. There were 32 women caregivers in the random condition and 31 in the choice condition. Our goal was to determine whether random assignment and choice produced similar outcomes. Total resourcefulness (i.e. RS) scores varied significantly over the three time points ($F_{\text{Huynh-Feldt}}(df = 1.74, 106.46) = 37.34, p < .001$). Total resourcefulness increased over time, but there were no significant differences between caregivers who were randomly assigned and those who were given a choice of practice / reinforcement method. The interaction between group and time was not significant.

The women caregivers who were randomly assigned to RT with journal or RT with recorder were then compared to those who had a choice between RT with journal and RT with recorder on personal and social resourcefulness, to obtain information on the fidelity of teaching resourcefulness skills across the two reinforcement methods. For personal resourcefulness, mean scores varied significantly over the three time points ($F_{\text{Huynh-Feldt}}(df = 1.81, 110.32) = 20.80, p < .001$). Personal resourcefulness increased over time, but there were no significant differences between women caregivers who were randomly assigned and those who chose the journal or recorder to practice / reinforce resourcefulness skills; the group by time interaction was not significant. For social resourcefulness, mean scores also varied significantly over the three time points ($F_{\text{Huynh-Feldt}}(df = 1.73, 105.36) = 27.79, p < .001$). Social resourcefulness increased over time, but there were no significant differences between caregivers who were randomly assigned and those who chose the journal or the recorder to practice / reinforce resourcefulness skills; the group by time interaction was not significant.

Journals and recordings

All of the women described their use of resourcefulness skills in their journals or digital recordings. Although all caregivers did not use all eight skills, receipt and enactment of the resourcefulness training were evident because each skill was used by a majority of the caregivers. The three skills used most frequently were: relying on family/friends, seeking professionals/ experts, and organizing daily activities (used by 95%, 91%, and 83% of the caregivers). The least frequently used skill was positive self- talk.

When matrix methods were applied to examine skill use based on the mode of reflection/ reinforcement and whether the mode was chosen by the caregiver or assigned, some interesting patterns were noted (Table 3). An RT skill was sometimes used more frequently by one group than by the others. For example, 90% of those who chose to use journals used “exploration of new ideas,” as compared to 53–67% of the other groups. Also, those who chose digital recordings were the most frequent users (78%) of “changing from their usual reaction”, a skill used by only 60–64% of the other groups. While “positive self-talk” was the least frequently used skill overall, 73% of those assigned to digital recordings mentioned this skill, as compared to 44–57% in the other groups. “Relying on family and friends” was described by all of the caregivers in the choice groups, but to a lesser extent by those in the random conditions. Also, caregivers in the choice groups reported using skills more frequently than their randomly assigned counterparts (Table 3).

Discussion

This pilot study evaluated the implementation fidelity of an intervention to help women caregivers of elders with dementia develop resourcefulness skills. The intervention includes eight personal and social resourcefulness strategies that can help caregivers manage their daily stress and preserve their mental and physical health. Prior work had indicated that women dementia caregivers valued the skills taught in resourcefulness training and considered them useful for themselves and for other caregivers in similar situations (Zauszniewski, Lekhak, Yalpant, & Morris, 2015). This study focused on two dimensions of intervention fidelity: receipt of the intervention and enactment of the intervention by recipients (Gearing et al., 2011; Nelson et al., 2012). Receipt fidelity was primarily measured by quantitative means, while enactment fidelity was measured using a qualitative approach. Thus, our over-arching goal was to determine that the RT intervention protocol was clear so that interventionists could deliver the intervention accordingly and that the intervention recipients would provide qualitative and quantitative evidence of learning and using the resourcefulness skills they were taught. Such information is critical before moving forward with larger clinical trials to examine the effects of RT on health outcomes across caregiver populations.

The findings from this study revealed adequate receipt and enactment fidelity, as reflected in improvements over time in overall resourcefulness skills as well as in specific forms of personal and social resourcefulness. Qualitative data indicated that caregivers in both the RT with journal and RT with digital recording groups were able to learn and implement the RT skills. When caregivers' resourcefulness skills were compared based on the practice method used (journaling or digital recording) to describe their enactment of the skills, similar results were found, suggesting similar receipt and enactment fidelity.

Few studies have focused on examining intervention fidelity among dementia caregivers (e.g., Burgio et al., 2001; Zarit, Lee, Barrineau, Whitlatch, & Femina, 2013). Zarit and colleagues (2013) assessed fidelity of their adaptive intervention by rating counselors competence and caregivers satisfaction of program, which is different than what we focused on receipt and enactment of intervention by caregivers. Our assessment of intervention fidelity was similar to the REACH study (Burgio et al, 2001), which assessed treatment delivery, receipt, and enactment. Even though we did not focus on assessing the delivery of the intervention, our interventionist were trained graduate students and were assessed after each training session based on checklist of objectives and content as explained above in interventionist training.

In addition, no significant differences were found in overall, personal, or social resourcefulness between women caregivers who were randomly assigned to a practice / reinforcement method and those who had a choice between the two methods, indicating similar implementation fidelity for these two conditions. When given the choice, more caregivers (69%) chose the journaling mode than the digital recordings (31%), and caregivers in choice groups reported the use of RT skills more frequently than their counterparts in the randomly assigned condition. This suggests the efficacy of allowing all RT training caregivers to choose their method of reflection/reinforcement, and is consistent

with research in teaching and learning which supports choice of learning strategies based on learning styles (Kolb & Kolb, 2005).

We concluded that the teaching of resourcefulness skills and the implementation of practice / reinforcement methods were done consistently and effectively regardless of random assignment or choice. RT intervention fidelity was not associated with random assignment and thus choice of practice / reinforcement method may be a useful approach since women caregivers may find journaling more feasible than using a digital voice recorder (Zauszniewski et al., 2015). In terms of receipt fidelity, the findings from this study were very similar to those of an earlier study of RT in grandmother caregivers (Zauszniewski, Musil, Burant, Standing, & Au, 2014). In terms of enactment fidelity, the skills used most frequently by both grandmother and women dementia caregivers were “relying on family and friends” and “organizing daily activities.” However, “using positive self-talk” was one of the skills most frequently used by the grandmothers, it was least used by dementia caregivers. In contrast, “exchanging ideas with others” was used more by these caregivers than by grandmother caregivers. These differences could have been due to differences in age, race, and type of caregiving in these two groups.

The findings from this study should be cautiously interpreted considering the convenience sampling of a small number of women dementia caregivers, which limits the generalizability. However, the caregiver’s baseline resourcefulness scores indicated they had a moderate need for learning resourcefulness skills. And, their improvement in resourcefulness scores post-RT provides evidence that, regardless of reinforcement method (i.e. journal versus recorder), the RT protocol for teaching and reinforcing resourcefulness skills was successfully implemented to achieve its intended purpose. However, evaluation of future implementation fidelity of RT may be enriched by using available software qualitative analyses and by adding the Resourcefulness Skills Scale (Zauszniewski & Bekhet, 2011) to evaluate the learning of the eight skills constituting resourcefulness, which was not available for this study.

In conclusion, our findings suggest that the RT intervention, whether reinforced by journaling or digital recording, has implementation fidelity in terms of receipt and enactment. In addition, the fidelity of the RT intervention did not appear to be influenced by caregiver choice versus random assignment. In all cases, the women dementia caregivers all showed improvement in their overall, personal, and social resourcefulness. Thus, the findings support testing the effectiveness of resourcefulness training, with continued examination of reinforcement methods.

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Figure 1. Assignment of women dementia caregivers (N=63) to four resourcefulness training (RT) groups

Table 1

Frequencies for demographic characteristics of women caregivers by group

Demographic	RT-journal random (n = 16)	RT-journal choice (n = 20)	RT-recorder random (n = 16)	RT-recorder choice (n = 11)
Race:				
White Caucasian	10	13	7	4
African	4	6	9	7
American	2	1	0	0
Marital status:				
Alone	5	7	10	7
Partnered	11	13	6	4
Education:				
High School	8	8	9	5
College +	8	12	7	6
Income:				
< 40K	9	11	8	7
40 K and >	7	7	6	3
Missing	0	2	2	1

Table 2

Resourcefulness scores over time by practice method and treatment condition

Variable (time)	RT - journaling		RT - recording	
	Random (n = 16) M (st. dev)	Choice (n = 20) M (st. dev)	Random (n = 16) M (st. dev)	Choice (n = 11) M (st. dev)
Resourcefulness Total				
Baseline	83.63 (17.70)	85.05 (17.67)	86.00 (16.68)	84.91 (18.76)
2 weeks post-RT	92.38 (22.46)	93.10 (15.31)	60.69 (16.14)	94.36 (19.08)
8 weeks post-RT	95.13 (21.88)	101.00 (19.28)	94.31(13.00)	97.09 (20.94)
Personal Resourcefulness				
Baseline	52.69 (11.12)	54.35(10.06)	54.19 (13.10)	53.45 (10.64)
2 weeks post-RT	57.44 (13.06)	58.10 (8.45)	56.50 (10.86)	59.64 (9.29)
8 weeks post-RT	58.00 (14.42)	60.80 (10.21)	58.50 (10.86)	59.43 (11.71)
Social Resourcefulness				
Baseline	30.94 (8.82)	30.70 (11.55)	31.81(8.30)	31.45 (10.91)
2 weeks post-RT	34.94 (11.13)	35.00 (11.65)	34.19 (10.33)	34.73 (11.72)
8 weeks post-RT	37.13 (10.79)	40.20 (11.37)	35.94 (6.79)	36.64 (11.44)

Note: Tests of significance (F and p values) for journal versus recorder methods and for random versus choice conditions are reported in the text.

Table 3

Use of resourcefulness skills described by women dementia caregivers in journals or digital recordings

RT Skill Described	Choice		Random	
	RT– journal (n=20)	RT– recorder (n=9)	RT– journal (n=14)	RT– recorder (n=16)
Rely on family / friends	100%	100%	93%	88%
Exchange ideas with others	80%	78%	64%	53%
Seek professionals / experts	95%	90%	93%	87%
Organize daily activities	90%	67%	71%	93%
Use positive self-talk	50%	44%	57%	73%
Reframe situation positively	70%	89%	57%	87%
Change from usual reaction	60%	78%	64%	60%
Explore new ideas	90%	67%	64%	53%