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Resourcefulness Training for Grandmothers raising Grandchildren: Establishing Fidelity

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Abstract

Over one million American grandmothers raise grandchildren, and many experience stress that adversely affects their mental health. Teaching resourcefulness skills can minimize that stress. However, before testing the effectiveness of Resourcefulness Training (RT), its fidelity must be established. This pilot intervention trial examined fidelity of two methods of RT: expressive writing (i.e., journaling) and verbal disclosure (i.e., voice recording) using a quasi-experimental design with random assignment of 80 grandmothers to RT-expressive writing, RT-verbal disclosure, expressive writing alone, or verbal disclosure alone. Quantitative data (Resourcefulness Scale) and qualitative data (journals, voice recordings) were collected. Grandmothers with RT showed greater resourcefulness over time than those without RT, with similar effects for RT-expressive writing and RT-verbal disclosure. Evidence for use of RT skills was found in journals and recordings. The findings provide evidence of the implementation fidelity of RT with expressive writing or verbal disclosure and support moving forward to test RT effectiveness in reducing grandmothers' stress and promoting their mental health.

Keywords

grandmothers; resourcefulness; implementation fidelity; intervention

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Raising grandchildren is becoming more prevalent across the globe (Chen & Liu, 2012). In the United States Census, there has been a 64% increase in the number of grandchildren who live with a grandparent over the last two decades (Kreider & Ellis, 2011). More than 1.7 million grandmothers in this country are caring for grandchildren, providing for their basic

needs for food, shelter, and clothing, and 40% live within their household (U.S. Census Bureau, 2010 American Community Survey). While approximately 30% of these grandmothers are over the age of 60, most are between the ages of 30 and 59 (U.S. Census Bureau, 2010 American Community Survey) and many must balance the care of grandchildren with employment outside the home.

A substantial body of literature has provided evidence that raising grandchildren is associated with negative psychological outcomes, including depressive symptoms, heightened stress, and poorer quality of life (Hughes, Waite, LaPierre & Luo, 2007; Musil, Warner, Zauszniewski, Wykle, & Standing, 2009). However, research has also shown that grandmothers with greater resourcefulness had fewer depressive symptoms and better family functioning (Musil, Warner, Zauszniewski, Jeanblanc, & Kercher, 2006; Musil, et al, 2009). Yet interventions to promote resourcefulness, reduce caregiving stress and depressive symptoms, or enhance family functioning or quality of life of grandmothers raising grandchildren are absent from the literature.

Importance of intervention fidelity

In developing an intervention to promote resourcefulness in grandmothers raising grandchildren, it is important to first establish that the intervention, which incorporates the teaching of both personal and social skills constituting resourcefulness, has adequate intervention fidelity. In general, intervention fidelity involves the implementation of selected methodological approaches to strengthen the reliability and validity of behavioral interventions (Bellg et al. 2004). For psychosocial interventions, which tend to be flexible, tailored, individualized, and not always clearly explicated, establishing fidelity is of particular importance (Santacroce et al, 2004). Five areas of intervention fidelity have been identified by the National Institutes of Health Behavior Change Consortium as study design, provider training, treatment delivery, receipt of treatment and enactment of treatment skills (Bellg et al, 2004). Fidelity in relation to the first three areas involves evaluation of activities of researchers and interventionists while the last two areas (receipt and enactment) focus on the intervention recipient. Michie (2005) recommended that receipt and enactment should be considered as responses to the intervention that may be influenced by first three areas: study design, provider training and intervention delivery.

Receipt and enactment of the intervention are core components of intervention fidelity (Gearing et al, 2011) that have received less attention than the other intervention fidelity components. How well an intervention is received is associated with recipients' comprehension and use of the skills they are taught (Bellg, et al, 2004; Borelli, et al, 2005; Zauszniewski, 2012a) and the extent to which they engage in and continue to implement the content taught during the intervention during relevant everyday activities (Dusenbury, Brannigan, Falco, & Hansen, 2003). Pre- and post-test knowledge measures are one way to measure intervention receipt and enactment (Gearing, et al, 2011; Zauszniewski, 2012a). However, such measures may indicate that essential content was provided during intervention delivery (Bellg, et al, 2004) but not necessarily whether the information has been retained or used, and whether the skills will be applied in the future. Therefore, Robb, Burns, Docherty, and Haase (2011) recommend the need to investigate strategies for ensuring the receipt of skills taught during an intervention (i.e., understanding) and the enactment of those skills (i.e., application) in real-life situations.

While the fidelity of an intervention can be assessed by researchers, intervention providers (e.g., Horn, Dino, Hamilton, Noerachmanto, & Zhang, 2008), or observers (e.g., Hogue et al., 2008), fidelity assessments by intervention recipients are a cost-effective and underutilized method for evaluating intervention fidelity (Essok, Covell, Shear, Donahue, & Felton, 2006). In addition, intervention recipients can provide critical information

concerning intervention fidelity particularly with regard to the receipt and enactment of cognitive-behavioral interventions (Zauszniewski, 2012a). Therefore, this study examined the receipt and the enactment of the RT intervention in grandmothers raising grandchildren. More specifically, the receipt and enactment of two different methods for practicing and reinforcing the resourcefulness skills were examined: expressive writing and verbal disclosure.

Interventions in Grandmothers

Few studies have examined the development and testing of health-promoting interventions with grandmothers raising grandchildren, and the interventions described in the literature have been restricted to educational programs or support groups (Cox, 2002; Edwards & Sweeney, 2007; Kolomer et al., 2003; Kopera-Frye, Wiscott, & Begovic, 2003). Further, many of the studies to date have been simply descriptions of interventions without outcome data (Dannison & Smith, 2003; Edwards & Sweeney, 2007; Kolomer, McCallion, & Overeynder, 2003; Kopera-Frye et al, 2003) and none have reported an assessment of intervention fidelity, particularly the receipt or enactment of the intervention.

For example, Brown and colleagues (2000) conducted a qualitative descriptive study with 35 African-American grandmothers raising adolescent grandchildren, who had received a 4-day intervention centered on health promotion for themselves and their grandchildren. The intervention focused on empowering grandmothers with knowledge, skills, and confidence to teach their grandchildren ways to reduce risks for various diseases. The findings from this qualitative analysis pointed to a need for interventions, particularly in regard to educating their grandchildren about health and social risks common to adolescents and obtaining community support for raising their grandchildren. The findings also supported the acceptability of educational and skill-building interventions to improve communication with grandchildren. However, the study did not evaluate the fidelity of the intervention in terms of whether the grandmothers who received it felt empowered with sufficient knowledge, skills, or confidence to teach health-promoting strategies to their adolescent children.

In another study of African-American grandmothers, Kelley, Whitely, and Sipe (2007) tested a year-long, interdisciplinary, home-based intervention to reduce psychological stress, improve physical health and social support, and enhance family coping resources. Although the study found improvements in most of the targeted areas, suggesting its effectiveness, there was no documented evaluation of intervention fidelity from the perspective of the grandmothers who took part in it.

Kicklighter and colleagues (2007) also conducted an intervention study focused on African American grandmothers. The intervention consisted of 10 fifteen minute educational sessions on nutrition and exercise integrated into a larger community-based health promoting intervention for small support and parenting groups. Nutrition and physical activity knowledge were measured before and after the program. Although the findings indicated significant increases in self-reported knowledge among the grandmothers, which may indicate fidelity in terms of intervention receipt, behavioral changes that would indicate intervention enactment were not captured.

More recently, Kelley, Whitley and Campos (2010) conducted an intervention study with 529 grandmothers raising grandchildren. The 12-month intervention consisted of in-home visitation by registered nurses and social workers to enhance grandmothers' sense of personal control and general well-being. The intervention included participation in support groups and parenting classes, and provision of referrals for social or legal services. Preliminary findings suggested that grandmothers might benefit from this intervention. The researchers assessed the fidelity of intervention delivery in describing an intervention

protocol, procedural manual, and data collection guidelines. However, they did not describe measures of receipt or enactment of the intervention from the perspective of the grandmothers.

Thus, studies reporting on receipt or enactment of an intervention from the viewpoint of the intervention recipients, in this case grandmothers raising grandchildren, are absent from the literature. In addition, published studies of teaching resourcefulness skills to various populations (Zauszniewski, Bekhet, Lai, McDonald, & Musil, 2007; Zauszniewski, Eggenschwiler, Preechawong, Roberts, & Morris, 2006), have reported findings in relation to effects on health outcomes, but none have provided evidence for the fidelity of resourcefulness training.

Therefore, this pilot intervention trial evaluated receipt and enactment fidelity of resourcefulness skills training and the equivalence of two methods of reinforcing these skills, expressive writing (daily journal) and verbal disclosure (daily digital voice recording), in grandmothers raising grandchildren. The study was informed by two theoretical frameworks. Zauszniewski's theory of resourcefulness and quality of life (2012b) informed the development of the resourcefulness training intervention and her model for examining critical parameters of interventions (2012a) was used to examine the fidelity of the interventions from the perspective of intervention recipients.

Fidelity was evaluated using subjective and objective, qualitative and quantitative measures. We sought to determine whether grandmothers who received resourcefulness training (RT) reinforced by either expressive writing or verbal disclosure would report greater personal and social resourcefulness over time than those who practiced expressive writing or verbal disclosure without RT. We expected that if the RT was provided accurately and consistently, scores on measures of personal and resourcefulness would increase for those who received the RT intervention. In addition, we looked at whether one method of reinforcing RT (expressive writing or verbal disclosure) was superior to the other in increasing personal and social resourcefulness skills in the grandmothers over time. The literature suggests that expressive writing is more beneficial than verbal disclosure for stress reduction (Pennebaker, 2003), but whether one of these methods is better for practicing and reinforcing resourcefulness skills is not known. Finally, we looked at whether grandmothers would describe their use of the skills taught during the RT in their journals or digital voice recordings, providing evidence of intervention receipt and enactment.

Methods

Design

This community-based, mixed methods, longitudinal study involved a convenience sample of 80 grandmothers raising grandchildren, who were randomly assigned to one of four treatment conditions. Two of the four treatment conditions consisted of resourcefulness training (RT); in one condition, grandmothers kept a daily written journal (expressive writing) and in the other, grandmothers used a digital voice recorder (verbal disclosure) to practice and reinforce resourcefulness skills during a 4-week period following a single RT training session. Twenty grandmothers were randomly assigned to each of these two conditions. Two additional treatment conditions were used for comparison: journaling or recording without the RT session during which personal and social resourcefulness skills were taught. Twenty grandmothers were assigned to each of these two conditions (Table 1).

Sample and setting

Before the grandmothers were identified and recruited, approval for the study was obtained from the University Institutional Review Board. Grandmothers were recruited through flyers

posted in the community, support groups, and referrals from other grandmothers within Cuyahoga County. To be included in the study, the grandmother had to have cared for a grandchild under 18 years of age for at least 6 months. The total sample of 80 grandmothers was considered sufficient for the analyses, which consisted of two sets of repeated measures analysis of variances: the first compared two groups (RT versus no RT) with 40 in each; the second compared RT with expressive writing versus RT with verbal disclosure) with 20 in each.

Interventionist training and supervision of delivery

The RT and comparison interventions were provided by four graduate nursing or social work students who were trained and supervised throughout the study by the principal investigator and project manager. Two interventionists provided the RT (with expressive writing or verbal disclosure) while the other two were blinded, i.e. not taught the resourcefulness skills, but were trained to deliver only the expressive writing or verbal disclosure interventions. The RT interventionists were trained during a single, one hour session using a training manual that specified the content of RT, including the eight skills to be taught, discussed, and reviewed with each grandmother and the reinforcement method to be used (expressive writing or verbal disclosure). Training for the interventionists for the comparison groups focused only on expressive writing or verbal disclosure. Following the training session with each grandmother, checklists with the objectives and content were reviewed with them to insure that all aspects of the training were completed.

Resourcefulness Training Intervention

The skills constituting personal and social resourcefulness were taught to 40 grandmothers by a trained intervention provider in a single 40-minute session. At the training session, each grandmother received a 3x5 inch laminated card on which the eight resourcefulness skills were printed. After teaching the skills, the intervention provider explained the daily use of a written journal (expressive writing), recommending 3–5 pages per day, or daily use of a digital voice recorder (verbal disclosure), recommending 5–7 minutes per day, depending on the condition to which the grandmother was assigned. Before journaling or recording, the grandmothers were asked to review the laminated card each day and reflect on the resourcefulness skills they had learned and used for the next 4 weeks. The reflection on their practice of resourcefulness skills, which took place between the baseline and the second data collection interviews, served as a mechanism for reinforcing the resourcefulness skills.

Data Collection

Data were collected during four face-to-face, structured interviews spaced 6 weeks apart (baseline, and 2 weeks, 8 weeks, and 14 weeks post-intervention) and from written journals and digital voice recordings used during the intervention. The resourcefulness training, expressive writing, and verbal disclosure interventions were provided between the first and second data collection interviews.

Quantitative measures

In addition to a demographic questionnaire, we used quantitative measures to evaluate the fidelity of the resourcefulness training intervention. The demographic questionnaire was a self-report measure of 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, 2003).

The quantitative measure used to capture fidelity was the 28-item Resourcefulness Scale (RS; Zauszniewski, Lai, & Tithiphontumrong, 2006), which consists of 16 personal resourcefulness and 12 social resourcefulness items with responses on a 6-point Likert scale, ranging from extremely non-descriptive of one's behavior (0) to extremely descriptive (5). Total scores may range from 0 to 140, with higher scores indicating greater resourcefulness (Zauszniewski 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 total scale and subscales reflecting personal and social resourcefulness have been reported, with Cronbach's alphas of .85, .83, and .79, respectively. Construct validity was supported by confirmatory factor analysis verifying the presence of substantially correlated subscales reflecting personal and social resourcefulness ($r = .41$, $p < .001$). In this study sample, Cronbach's alpha for the total scale was .81 and alphas were .73 for each of the subscales.

Qualitative measures

The fidelity of the RT interventions was also assessed from qualitative data obtained from the journals and digital voice recordings of grandmothers who participated in the RT with expressive writing or verbal disclosure. We expected that if intervention delivery fidelity was maintained while the personal and social skills constituting resourcefulness were taught during RT, the grandmothers would write or record their use of the skills, i.e. mention / describe them by name, in their journals or digital voice recordings. Therefore, we tracked the grandmothers' use of the eight resourcefulness skills as recorded in their daily journals or on the digital voice recordings over the 4-week intervention period. Thus, the daily journaling and recording entries provided qualitative data on whether grandmothers used the skills they were taught and which ones they most frequently used.

All daily journal and digital voice recorded data were transcribed and provided to a qualitative researcher who was blind to the grandmothers' group assignments. Hard copies of the transcripts were reviewed line by line for instances of each grandmother's use of any of the eight resourcefulness skills. Each instance of the skills was hand coded as the appropriate skill. Transcripts were then formatted and imported into QSR NVIVO 8 (2008) qualitative data analysis software, and coding categories were established. The hand coded transcripts were again reviewed for instances of the eight resourcefulness skills and any discrepancies between the first and second coding were resolved. Instances of resourcefulness were then coded into the NVIVO program and using NVIVO's coding summary function, data coded into each of the eight resourcefulness skills were reviewed for appropriate fit with the category. Finally, using NVIVO's graphing function, a bar graph was constructed depicting the coding for each resourcefulness skill by study group to display differences between the groups.

Results

Sample characteristics

Ages of the 80 grandmothers ranged from 40 to 82 years with an average age of 58 (st.dev. = 9). One third (33%) of the sample were married, and nearly another third (31%) reported living apart from their spouse; 19% reported themselves as single and 17% as widowed. Close to half of the grandmothers (48%) reported some college education and 7% reported completing a college degree; another third (36%) had only completed high school / GED, and 9% reported less than a high school education. More than half (52%) reported an annual income less than \$20,000, while 27% reported incomes between \$20,001 and \$40,000; 17% reported incomes greater than \$40,001; and 4% did not report their income. When asked whether they had any of the 10 health conditions listed on the checklist of leading health

problems of women (U.S. Department of Health and Human Services, 2003), they reported about one condition on average; the most frequent were hypertension (42%), diabetes (20%), respiratory disease (12%), and mental disorder, i.e. depression (12%).

Resourcefulness training (RT) versus comparison groups

Six, 4×2 (4 time points by two groups) repeated measures analysis of variance tests were conducted to examine differences between grandmothers who received RT with expressive writing or verbal disclosure for reinforcement and grandmothers who received expressive writing or verbal disclosure without RT. Mean scores for the four groups on personal and social resourcefulness were plotted across the four measurement points (baseline and at 2 weeks, 8 weeks, and 14 weeks post-intervention) (Table 2).

RT versus no RT

A repeated measures analysis of variance was used to compare grandmothers who received RT (with EW or VD) with those who did not receive RT (but used EW or VD) on total, personal, and social resourcefulness. There were 40 grandmothers in each of the two conditions. We expected that if the resourcefulness skills were taught effectively during RT, grandmothers in the RT condition would show greater total, personal, and social resourcefulness over time than grandmothers who did not have RT.

The mean total resourcefulness scores varied significantly over the four time points ($F_{\text{Hyunh-Feldt}}(df=2.77, 216.35) = 25.01, p < .001$); total resourcefulness increased over time. Between group mean differences were also significant ($F(df=1, 78) = 12.26, p < .001$). Grandmothers receiving RT had a higher mean total resourcefulness score as compared to those who did not receive RT. The interaction between group and time also differed significantly ($F_{\text{Hyunh-Feldt}}(df=2.77, 216.35) = 20.55, p < .001$). Grandmothers receiving RT showed an increase in total resourcefulness scores over time scores for grandmothers who did not receive RT were stable over time.

To obtain information on the fidelity of teaching the two sets of resourcefulness skills, grandmothers who received RT were compared to those who did not receive RT on personal and social resourcefulness. For personal resourcefulness, the mean scores increased significantly over the four time points ($F(df=3, 234) = 13.96, p < .001$); personal resourcefulness increased over time. Between group mean differences also differed significantly ($F(df=1, 78) = 11.98, p = .001$). Grandmothers receiving RT had a higher mean personal resourcefulness score as compared to those who did not receive RT. The interaction between group and time also differed significantly ($F(df=3, 234) = 14.33, p < .001$). Grandmothers receiving RT had an increase in personal resourcefulness scores over time while personal resourcefulness scores for the grandmothers who did not receive RT were stable over time.

For social resourcefulness, the mean scores varied significantly over the four time points ($F_{\text{Hyunh-Feldt}}(df=2.74, 213.73) = 15.70, p < .001$); social resourcefulness increased over time. Between group mean differences also differed significantly ($F(df=1, 78) = 7.02, p = .01$). Grandmothers receiving RT had a higher mean social resourcefulness score as compared to those who did not receive RT. The interaction between group and time also differed significantly ($F_{\text{Hyunh-Feldt}}(df=2.74, 213.73) = 12.38, p < .001$). Grandmothers receiving RT had an increase in social resourcefulness scores over time while social resourcefulness scores for the grandmothers who did not receive RT were stable over time.

Expressive writing versus verbal disclosure

A repeated measures analysis of variance was used to compare grandmothers who received RT with expressive writing with those who received RT with verbal disclosure on total, personal, and social resourcefulness. There were 20 grandmothers in each condition. Our goal was to determine whether the two methods of reinforcing the teaching of resourcefulness skills had similar implementation fidelity. The mean total resourcefulness scores varied significantly over the four time points ($F_{\text{Greenhouse-Geisser}}(df= 2.21,83.78) = 48.97, p<.001$); total resourcefulness increased over time. There were no significant group differences in total resourcefulness between grandmothers who received RT with expressive writing and those who received RT with verbal disclosure, and the interaction between group and time was not significant.

Next, grandmothers who received RT with expressive writing were compared to those who received RT with verbal disclosure on personal and social resourcefulness to obtain information concerning the fidelity of teaching resourcefulness skills with the two methods. For personal resourcefulness, mean scores varied significantly over the four time points ($F(df= 3,114) = 23.23, p<.001$); personal resourcefulness increased over time. There were no significant group differences in personal resourcefulness between those grandmothers who received RT with expressive writing and those who received RT with verbal disclosure, and the interaction between group and time was not significant.

For social resourcefulness, mean scores varied significantly over the four time points ($F_{\text{Greenhouse-Geisser}}(df= 2.07,78.77) = 38.07, p<.001$); social resourcefulness increased over time. There were no significant group differences in social resourcefulness between those grandmothers who received RT with expressive writing and those who received RT with verbal disclosure, and the interaction between group and time was not significant.

Journals and recordings

The grandmothers in both RT groups described resourcefulness skills in their journals or digital recordings; the skills described most frequently were: relying on family/friends, organizing daily activities, and using positive self-talk (70%, 58%, and 55% of the time, respectively). However, although the use of all eight resourcefulness skills was reflected in the journals and recordings, there were some differences between grandmothers who used the journals (expressive writing) and those who used digital voice recordings (verbal disclosure) (Table 3).

For example, “relying on family and friends” was described by 16 grandmothers in RT-verbal disclosure and 12 in RT-expressive writing. “Using positive self-talk” was described by 13 in the RT-verbal disclosure group and 9 in the RT-expressive writing group, and “organizing daily activities was described by 12 grandmothers in RT-expressive writing and 11 grandmothers in RT-verbal disclosure. Overall, grandmothers in the RT-verbal disclosure group described 7 of the 8 resourcefulness skills more frequently than did the grandmothers in the RT-expressive writing group.

Discussion

This pilot study evaluated the implementation fidelity of an intervention to help grandmothers raising grandchildren improve their resourcefulness skills, from the perspective of the grandmother caregivers. The intervention focuses on developing eight personal and social resourcefulness capabilities that can help grandmother caregivers in many aspects of their day-to-day lives. Our prior work has shown that grandmothers value the skills taught in resourcefulness training and consider it useful to develop resourcefulness

skills for themselves and for other grandmothers like them (Zauszniewski, Au, & Musil, 2012; Zauszniewski, Musil, & Au, in press).

This study focused on two aspects of intervention fidelity: receipt of the intervention and enactment by intervention recipients. Our findings suggest that adequate receipt and enactment fidelity was reflected in improvements in both personal and social resourcefulness skills. While all the grandmothers participated in some form of expressive disclosure, either through writing or use of a digital recorder, only those who received RT showed significant increases in resourcefulness skills. We expected to observe such increases if teaching was done effectively, and our data indicate that those in the intervention group were able to learn the skills and to change their thinking and behavior (Bosak, Pozehl, & Yates, 2012).

Intervention fidelity was also addressed by evaluating the equivalence of two reinforcement methods, verbal and written. No differences on resourcefulness were found, suggesting similar receipt and enactment fidelity. However, since there were only 20 participants in each group, the analysis may have been underpowered to detect small but potential clinically relevant differences in performance. Further, qualitative comparisons suggested that verbal disclosure may have promoted slightly better enactment fidelity than expressive writing. Although we did not compare participants in the two types of reinforcement conditions on the skills they used, those in the verbal reinforcement group reported more skills in all categories except “exchanging ideas with others.” For the skills of “reframing the situation”, “positive self-talk” and “relying on family and friends”, the differences between conditions were sizable - - 30%, 20% and 20%, respectively. This finding is not consistent with Pennebaker (2003), who suggested that expressive writing is superior to verbal disclosure in stress reduction. However, stress level was not evaluated in this study.

Two points require additional evaluation in future work. First, it is not clear whether those grandmothers who used verbal disclosure actually used more of these skills or whether the method of reinforcement was confounded with skill reporting. Second, it is not clear whether the potential confounding might affect interpretation of receipt or enactment fidelity of the intervention. A more complex design will be needed to control for such effects, if they exist. In addition, this study focused on evaluating the receipt and enactment of the RT intervention, which are two of the five identified aspects on intervention fidelity (Bellg et al, 2004). However, receipt and enactment fidelity, which are aimed at the intervention recipient, are believed to be outcomes of an intervention that are influenced by the other three aspects of fidelity - - study design, provider training, and intervention delivery (Michie, 2005). Future research should examine the impact of study design, provider training, and intervention delivery on receipt and enactment of RT to more fully support its reliability and validity.

In general, we are encouraged by our findings, which point to support for the fidelity of the RT intervention in terms of receipt and enactment. Those who had the training improved in their resourcefulness, and the findings thus support moving forward to test the effectiveness of resourcefulness skills training and continued examination of reinforcement methods.

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References

- Bell AJ, Borrelli B, Resnick B, Hecht J, Minicucci DS, Ory M, Ogedegbe G, Orwig D, Ernst D, Czajkowski S. Enhancing treatment fidelity in health behavior change studies: Best practices and recommendations from the NIH Behavior Change Consortium. *Health Psychology*. 2004; 23(5): 443–451. [PubMed: 15367063]
- Borelli B, Sepinwall D, Bell AJ, Breger R, DeFrancesco C, Sharp DL, Ernst D, Czajkowski S, Levesque C, Ogedegbe G, Resnick B, Orwig D. A new tool to assess treatment fidelity and evaluation of treatment fidelity across 10 years of health behavior research. *Journal of Consulting and Clinical Psychology*. 2005; 73(5):852–860. [PubMed: 16287385]
- Bosak KA, Pozehl B, Yates B. Challenges of applying a comprehensive model of intervention fidelity. *Western Journal of Nursing Research*. 2012; 34(4):504–519. [PubMed: 21474676]
- Brown EJ, Jemmott LS, Outlaw FH, Wilson G, Howard M, Curtis S. African American grandmothers' perceptions of caregiver concerns associated with rearing adolescent grandchildren. *Archives of Psychiatric Nursing*. 2000; 14(2):73–80. [PubMed: 10783525]
- Chen F, Liu G. The health implications of grandparents caring for grandchildren in China. *Journal of Gerontology, Series B: Psychological Sciences and Social Sciences*. 2012; 67(1):99–112.
- Cox CB. Empowering African American custodial grandparents. *Social Work*. 2002; 47:46–54.
- Dannison L, Smith A. Lessons learned from a custodial grandparent community support program. *Children and Schools*. 2003; 25(2):87–95.
- Dusenbury L, Brannigan R, Falco M, Hansen W. A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research*. 2003; 18(2): 237–256. [PubMed: 12729182]
- Edwards OW, Sweeney AE. Theory-based interventions for school children cared for by their grandparents. *Educational Psychology in Practice*. 2007; 23:177–190.
- Essok SM, Covell NH, Shear KM, Donahue SA, Felton CJ. Use of clients' self-reports to monitor Project Liberty clinicians' fidelity to a cognitive-behavioral intervention. *Psychiatric Services*. 2006; 57(9):1320–1323. [PubMed: 16968764]
- Gearing RE, El-Bassel N, Ghesquiere A, Baldwin S, Gillies J, Ngeow E. Major ingredients of fidelity: A review and scientific guide to improving quality of intervention research implementation. *Clinical Psychology Review*. 2011; 31(1):79–88. [PubMed: 21130938]
- Hogue A, Henderson CE, Dauber S, Barajas PC, Fried A, Liddle HA. Treatment adherence, competence, and outcome in individual and family therapy for adolescent behavior problems. *Journal of Consulting and Clinical Psychology*. 2008; 76(4):544–555. [PubMed: 18665684]
- Horn K, Dino G, Hamilton C, Noerachmanto N, Zhang J. Feasibility of a smoking cessation intervention for teens in the emergency department: Reach, implementation fidelity, and acceptability. *American Journal of Critical Care*. 2008; 17(3):205–216. [PubMed: 18476313]
- Hughes ME, Waite LJ, LaPierre TA, Luo Y. All in the family: the impact of caring for grandchildren on grandparents' health. *Journal of Gerontology B: Psychological & Social Sciences*. 2007; 62(2):S108–S119.
- Kelley SJ, Whitley DM, Campos PE. Grandmothers raising grandchildren: Results of an intervention to improve health outcomes. *Journal of Nursing Scholarship*. 2010; 42(4):379–386. [PubMed: 21091620]
- Kelley SJ, Whitley DM, Sipe TA. Results of an interdisciplinary intervention to improve the psychosocial well-being and physical functioning of African American grandmothers raising grandchildren. *Journal of Intergenerational Relationships*. 2007; 5:45–64.
- Kicklighter JR, Whitley DM, Kelley SJ, Shipskie SM, Taube JL, Berry RC. Grandparents raising grandchildren: A response to a nutrition and physical activity intervention. *Journal of the American Dietetic Association*. 2007; 107:121–123.
- Kolomer, SR.; McCallion, P.; Overeynder, J. Why support groups help: Successful interventions for grandparent caregiver of children with developmental disabilities. In: Hayslip, B.; Patrick, JH., editors. *Working with custodial grandparents*. New York: Springer; 2003. p. 111–125.

- Kopera-Frye, K.; Wiscott, RC.; Begovic, A. Lessons learned from custodial grandparents involved in a community support group. In: Hayslip, B.; Patrick, JH., editors. *Working with custodial grandparents*. New York: Springer; 2003. p. 243-256.
- Kreider, RM.; Ellis, R. Current Population Reports. Washington, DC: U.S. Census Bureau; 2011. Living Arrangements of Children: 2009; p. P70-P126.
- Michie S. Changing behavior: Theoretical development needs protocol adherence. *Health Psychology*. 2005; 24(4):439. [PubMed: 16045381]
- Musil CM, Warner CB, Zauszniewski JA, Jeanblanc A, Kercher K. Grandmothers, caregiving, and family functioning. *Journal of Gerontology*. 2006; 61(2):89–98.
- Musil CM, Warner CB, Zauszniewski JA, Wykle ML, Standing TS. Grandmother caregiving, family stress, and strain, and depressive symptoms. *Western Journal of Nursing Research*. 2009; 31(3): 389–408. [PubMed: 19261805]
- Pennebaker, JW. The social, linguistic, and health consequences of emotional disclosure. In: Suls, J.; Wallston, KA., editors. *Social Psychological Foundations of Health and Illness*. Malden, MA: Blackwell Publishers; 2003.
- Robb SL, Burns DS, Docherty SL, Haase JE. Ensuring treatment fidelity in a multi-site behavioral intervention study: Implementing NIH behavior change consortium recommendations in the SMART trial. *Psyco-oncology*. 2011; 20(11):1193–1201.
- Santacroce SJ, Maccarelli LM, Grey M. Intervention fidelity. *Nursing Research*. 2004; 53(1):63–66. [PubMed: 14726779]
- U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Women's Health USA 2003*. Rockville, Maryland: U.S. Department of Health and Human Services; 2003.
- U.S. Census Bureau. American Community Survey: Current Population, "Table 3: Employment Status of the Civilian Noninstitutional Population by Age, Sex, and Race," Annual Averages 2010. Washington, DC: Author; 2010.
- Zauszniewski JA. Intervention development: Assessing critical parameters from the intervention recipient's perspective. *Applied Nursing Research*. 2012a; 25(1):31–39. [PubMed: 20974101]
- Zauszniewski, JA. Resourcefulness. In: Fitzpatrick, JJ.; Kazer, M., editors. *Encyclopedia of Nursing Research*. New York: Springer Publishing; 2012b. p. 448-449.
- Zauszniewski JA, Au TY, Musil CM. Resourcefulness training for grandmothers raising grandchildren: Is there a need? *Issues in Mental Health Nursing*. 2012; 33(10):680–686. [PubMed: 23017045]
- Zauszniewski JA, Bekhet AK, Lai CY, McDonald PE, Musil CM. Effects of teaching resourcefulness and acceptance on affect, behavior, and cognition of chronically ill elders. *Issues in Mental Health Nursing*. 2007; 28(6):575–592. [PubMed: 17613157]
- Zauszniewski JA, Eggenschwiler K, Preehawong S, Roberts BL, Morris DL. Effects of teaching resourcefulness skills in elders. *Aging and Mental Health*. 2006; 10(4):1–9. [PubMed: 16338807]
- Zauszniewski JA, Lai CY, Tithiphumtong S. Development and testing of the Resourcefulness Scale for older adults. *Journal of Nursing Measurement*. 2006; 14(1):55–66.
- Zauszniewski JA, Musil CM, Au TY. Resourcefulness training for grandmothers raising grandchildren: Acceptability and feasibility of two methods. *Issues in Mental Health Nursing*. (in press).

Table 1

Random assignment of grandmothers (n=80) to four groups

Group	Resourcefulness Skills	N
Resourcefulness with Expressive Writing	Taught	20
Resourcefulness with Verbal Disclosure	Taught	20
Expressive Writing	Not taught	20
Verbal Disclosure	Not taught	20

Table 2

Resourcefulness scores over time by treatment condition

Variable (time)	No RT (N=40) M (st.dev)	RT (both groups) (N=40) M (st.dev)	RT (journal) (N=20) M (st.dev)	RT (recorder) (N=20) M (st.dev)
Resourcefulness				
Baseline	88.70(15.51)	88.17(16.41)	88.25(14.15)	88.10(18.78)
2 weeks post-intervention	87.57(15.06)	100.27(15.29)	100.05(14.04)	100.50(16.81)
8 weeks post-intervention	89.13(15.95)	105.82(15.99)	105.60(13.08)	106.05(18.82)
14 weeks post-intervention	90.08(15.70)	106.10(17.15)	105.30(16.80)	106.90(17.89)
Personal Resourcefulness				
Baseline	55.85(9.23)	56.07(9.03)	56.00(9.02)	56.15(9.27)
2 weeks post-intervention	55.68(8.06)	60.32(9.26)	60.25(9.68)	60.40(9.07)
8 weeks post-intervention	55.35(8.27)	64.98(9.74)	65.20(9.84)	64.75(9.88)
14 weeks post-intervention	56.13(7.74)	65.40(9.81)	65.60(10.02)	65.20(9.86)
Social Resourcefulness				
Baseline	32.85(8.85)	32.10(10.20)	32.25(9.69)	31.95(10.94)
2 weeks post-intervention	31.90(10.60)	39.95(9.44)	39.80(9.06)	40.10(10.05)
8 weeks post-intervention	33.78(10.40)	40.85(9.39)	40.40(9.17)	41.30(9.82)
14 weeks post-intervention	33.95(10.47)	40.70(10.26)	39.70(10.44)	41.70(10.24)

Table 3

Grandmothers' use of resourcefulness skills reported in journals and recordings

% Describing Use of RT Skill in Journals or Recordings		
RT Skill	RT – expressive writing	RT – verbal disclosure
Rely on family / friends	60%	80%
Exchange ideas with others	30%	30%
Seek professionals / experts	35%	40%
Organize daily activities	55%	60%
Use positive self-talk	45%	65%
Reframe situation positively	20%	50%
Change from usual reaction	30%	40%
Explore new ideas	20%	35%