Published in final edited form as:

Appl Nurs Res. 2016 November ; 32: 269–274. doi:10.1016/j.apnr.2016.08.005.

Journaling as Reinforcement for the Resourcefulness Training Intervention in Mothers of Technology-Dependent Children

Valerie Boebel Toly, PhD, RN, CPNP [Assistant Professor],

Frances Payne Bolton School of Nursing, Case Western Reserve University Cleveland, OH

Julia E. Blanchette, BSN, RN [PhD Student],

Frances Payne Bolton School of Nursing, Case Western Reserve University Cleveland, OH

jeb195@case.edu

Carol M. Musil, PhD, RN, FAAN [Marvin E. & Ruth Durr Denekas Professor of Nursing], and

Frances Payne Bolton School of Nursing, Case Western Reserve University Cleveland, OH

cmm4@case.edu

Jaclene A. Zauszniewski, PhD, RN-BC, FAAN [Kate Hanna Harvey Professor in Community Health Nursing Director, PhD in Nursing Program]

Frances Payne Bolton School of Nursing, Case Western Reserve University Cleveland, OH

jaz@case.edu

1. Introduction

Technology-dependent children are children with chronic conditions and complex care needs who are supported by lifesaving, medical technology such as mechanical ventilation, feeding tubes, or supplemental oxygen (Spratling, 2015). Mothers are typically the primary caregivers for these children (Toly, Musil & Carl, 2012a). Previous descriptive research found 40% of the mothers caring for technology-dependent children are at high risk for clinical depression (Toly et al., 2012a&b). Furthermore, mothers of technology-dependent children who were younger, un-partnered, and with lower normalization and personal resourcefulness had more depressive symptoms (Toly & Musil, 2015).

Resourcefulness is a factor related to depressive symptoms in mothers of technology-dependent children that is amenable to change (Toly & Musil, 2015). Resourcefulness is an acquired set of cognitive and behavioral skills that are used to attain, maintain, or regain health (Zauszniewski, 2012). Resourcefulness encompasses both social and personal resourcefulness as key aspects (Zauszniewski, 2012). Personal resourcefulness includes self-help skills such as organizing daily activities, using positive self-talk, reframing the situation

Contact Information of Corresponding Author: Valerie Boebel Toly, PhD, RN, CPNP, Frances Payne Bolton School of Nursing, Case Western Reserve University, 10900 Euclid Ave., Cleveland, OH 44106, vab@case.edu, Office: 216-368-3082 Fax: 216-368-3542.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Conflict of Interest: There is no conflict of interest for the authors to report.

positively, changing from usual reaction and exploring new ideas. Social resourcefulness skills include help-seeking skills such as relying on family and friends, exchanging ideas with others and seeking help from professionals or experts (Zauszniewski, 2012). An individual's resourcefulness level can change over time due to the influence of life events or can be taught using the Resourcefulness Training Intervention (RT) (Zauszniewski, Eggenschwiler, Preechawong, Roberts, & Morris, 2006; Zauszniewski, Musil, Burant, & Au, 2014).

RT consists of an in-person training session where eight social and personal resourcefulness skills are taught (Toly, Musil & Zauszniewski, 2014; Zauszniewski et al., 2006; Zauszniewski, Musil, Burant, & Au, 2014). The optimal method for facilitating learning of social and personal resourcefulness skills is practice and reinforcement—one approach is the use of expressive writing (Klein & Boals, 2001; Pennebaker, 1997; Richards, 2003). In addition to facilitating and reinforcing learning, expressive writing has been found effective in reducing stress and negative emotions and improving and promoting mental and physical health (Smyth & Helm, 2003; Buda, 2002; Lepore, Greenberg, Bruno & Smyth, 2002). The journaling used within RT is considered a form of expressive writing. Prior studies have used journal writing in RT to help individuals receiving the intervention to process negative emotions and stress (Zauszniewski et al., 2006; Zauszniewski, Musil, & Au, 2013; Zauszniewski et al., 2014), to facilitate and reinforce learning of resourcefulness skills, and to apply resourcefulness skills to stressful events (Toly et al., 2014; Zauszniewski & Musil, 2014). Journaling was a successful strategy for reinforcing the RT intervention material and effective in reducing stress and depressive symptoms, decreasing negative emotions and depressive cognitions, and improving mental health (Toly et al., 2014; Zauszniewski et al., 2013).

1.1. Study purpose

The purpose of this study was to determine the feasibility, acceptability and fidelity of journaling as method of reinforcement of the RT intervention (social and personal resourcefulness skills) among mothers of children with chronic conditions and complex care needs who are dependent on medical technology.

2. Methods

2.1. Design and sample

This study was a secondary analysis of a randomized, controlled pilot intervention study in which RT journaling instruction was delivered. A convenience sample of 22 mothers caring for children <18 years of age at home who were dependent on medical technology based on the Office of Technology Assessment (OTA, 1987) group classification system was obtained. OTA groups are defined as follows: Group 1 mechanical ventilation, Group 2 intravenous nutrition/medication, and Group 3 respiratory/nutritional support. The participants were randomly assigned to either the RT Intervention group (RT with journaling) (n=13) or the comparison group (journaling only) (n=9). IRB approval was obtained from a large children's hospital in the Midwest. The procedures for screening and recruitment are described elsewhere (section 2.4.1. of Toly et al., 2014).

2.2. Procedures

The primary researcher used a systematic procedure to train the intervention nurse (a registered nurse specializing in pediatric nursing) and monitor standardized administration of the RT intervention. Examples of each resourcefulness skill and intervention delivery instructions were given to the intervention nurse. The intervention nurse observed the researcher deliver the intervention to two participants. Then, the researcher observed the intervention nurse deliver the intervention according to written protocol before approval of delivery of the intervention to participants.

RT was delivered by the intervention nurse in a face-to-face session lasting approximately 50 minutes in a private location chosen by the participant. The intervention included teaching three social resourcefulness skills (help seeking) and five personal resourcefulness skills (self-help), four weeks of journal writing on the application of resourcefulness skills in their daily life for reinforcement, and weekly phone calls from the intervention nurse for four weeks. The acronym “RESOURCE” is used to assist with recall of resourcefulness skills. Participants in the intervention group were given a wallet-sized card listing the resourcefulness skills to keep in their journal and a magnet for their refrigerator. They were instructed to review their card and describe specific examples of resourcefulness skill application when caring for their child in their daily journal entries to reinforce RT. The following skills were taught: rely on family/friends, exchange ideas with others, seek professionals or experts, organize daily activities, use positive self-talk, reframe the situation positively, change from usual reaction, and explore new ideas. The comparison group was instructed to write about events they deemed important or stressful. Mothers were instructed to write one or two pages in the journals once a day, every day for four weeks.

2.3. Data collection

Data related to family outcomes and maternal mental health outcomes were collected at baseline using structured interviews and by mail for the six-week follow-up. Participants returned their journals to the study office at the end of the four-week journaling exercise. This report describes solely the journaling outcomes and demographic characteristics.

2.4. Data analysis

Feasibility was assessed by analyzing the journals for number of journal days completed and total number of words per journal and number. Acceptability was assessed by content analysis of verbatim transcriptions of open-ended exit interview responses of mothers regarding their journaling experience. Fidelity was analyzed by descriptions of resourcefulness skill application, and number and type of resourcefulness skills described.

3. Results

3.1. Sample characteristics

Mothers (N=22) were primarily Caucasian (82%), and had a yearly family income of \$40K to \$80K (Table 1). Most of the children were dependent on respiratory or nutritional support (OTA group 3) (Table 2). Sample characteristics are described in greater detail elsewhere (Toly et al., 2014).

3.2. Feasibility

A majority of the participants (95.5%) in both the RT group and comparison group completed the journaling intervention. One mother from the intervention group did not respond to follow-up data collection attempts. A total of 19 out of 22 mothers completed the journal writing for the total study period (four weeks). Two mothers in the RT group discontinued writing in journals due to health reasons: one due to pregnancy complications and another due to illness requiring surgery. Two mothers (one in the intervention group and one in the comparison group) completed the journal writing but did not want to share their journal with the research team. One of the mothers from the RT group attributed her reluctance to share her journal with a religious belief while the other mother in the comparison group felt the entries were too private to share. On average, mothers in the RT group completed journal entries on 22.9 days (median=25) compared with an average of 24.9 days (median=26.5) for the comparison group. The mean number of days the mothers in both groups completed journal entries was 23.9 days with a median of 26 days with a range from 12 days to 28 days.

Journal word counts across both groups averaged 3319.16 words total with a median of 3017 words. Table 3 shows the total number of words written in the journals for the total sample of mothers who returned their journal to the study office (n=19) and the two subgroups; RT intervention or comparison.

Depressive symptoms did not impact the feasibility of journaling. Mothers who had high depressive symptoms using the Center for Epidemiological Studies- Depression Scale (CES-D score >16; Radloff, 1977) did not have significantly different journaling patterns than mothers with lower depressive symptoms. Mothers with lower CES-D scores 15 (n=12) at Time 1 had scores ranging from 3-12 ($M=8.17$, median=9) and the average and median number of days they journaled was 23.7 and 26 days, respectively. Mothers with higher CES-D scores 16 (n=7) at Time 1 had scores ranging from 17-39 ($M=25.4$, median=23) and the average and median number of days they journaled was 22.3 and 25 days, respectively. Only one mother changed from a low to high CES-D score over time but journaled all 28 days. Therefore, even for the mothers most at risk for depression, journaling was still feasible.

3.4. Acceptability

In the content analysis of the exit interview transcripts, mothers reported that journaling helped reinforce resourcefulness skills they learned previously. Some participants reported negative points of the journaling activity but a majority reported that journaling was helpful. One participant stated, "It was stressful to think of this journal but now that it is done I hope some of this helps." Another participant reported journaling felt like an extra chore when stating, "I'm trying to keep up with the daily journal entries, but some days it's just another chore to fit into my day before I can go to bed... I'm kinda looking forward to being done with it." One participant even felt embarrassed about her attitude when journaling but also appreciated the positivity that resulted from journaling. She stated, "I remember one day in journaling I didn't want to write it down because I was embarrassed about how I've responded in my bad attitude, I was tired and I was cranky, it happened probably two or

three times and I thought I don't even want to write this but then I was excited because I saw different, so the reality is we all do it wrong, we all have bad days, we are cranky, ... and we do the wrong thing... but it was encouragement to see the change.” Another participant reported enjoying journaling for stress relief but did not like using the “RESOURCE” magnet or resourcefulness strategies because it caused extra stress. She stated, “Um, the thing that actually was the easiest was when I kind of stayed away from the magnet and I kind of just free wrote on one of the days and I preferred that.”

Although some participants found journaling to be time consuming and stressful, others found it to be helpful and actually stress-relieving. One participant stated, “Although keeping a journal was stressful ‘one more thing to do’ ... I meditated and talked myself into writing... keeping a journal is the best way to keep sane.” The participants felt journaling helped with self-reflection and was beneficial emotionally. Another participant stated, “This journaling process has made me think about my stress in new ways. It has made me look beyond the daily struggles and see the big picture. It has allowed me to try to focus on the positives. It makes me see the need for support and help.” Journaling was viewed as helpful and a positive experience overall. Most participants did not report extra stress from journaling and enjoyed the activity. Another participant stated, “I was enthusiastic about this meeting today. I enjoy getting involved in these research projects as I feel I am participating in something positive and potentially helpful to mothers in my position.”

Some participants found that journaling was helpful enough to continue even after completion of the study. One participant stated, “Keeping a journal is the best way to keep sane. Everyone should do this instead of phones. It helps a person be more organized and focused on daily living. Also, it affects tempers (especially when dealing with special needs children). I found I kept my temper in check for the total last month. I’m going to continue writing in a journal to help me out.”

3.3. Fidelity

Fidelity was measured by analyzing the completed journals for resourcefulness skills use (Table 4). The number and type of social and personal resourcefulness skills used by the mothers in the intervention group were analyzed from the journals returned to the study office (n=11). The most frequently recorded social resourcefulness skills were relying on family and friends (115 entries) and seeking professionals and experts (76 entries). The most frequently recorded personal resourcefulness skills were organizing daily activities (103 entries) and using positive self-talk (72 entries). The mean number of social resourcefulness skills that each mother recorded was 22.3 (median 19, range 5-52) and the mean number of personal resourcefulness skills was 27.5 (median 18, range 8-52). All mothers in the RT group recorded relying on family and friends, seeking professionals and experts and using positive self-talk at least once. A majority of the mothers (90 percent) recorded organizing daily activities. Table 5 displays the mean and median number of times each resourcefulness skill was used per mother for the RT group.

The most common skill mothers recorded was relying on family and friends. Participants gave examples such as running errands, taking naps or taking a break to relax while others cared for their technology-dependent child. One participant stated “Help from my husband

gives me time to take care of shopping for the family. Nice to get a break away from the house for a short time. Helps to decrease stress.” Some participants even relied on family and friends for emotional support. One participant stated, “It helped to know many others have gone through this. I even talked about it on my Facebook page. It was nice to receive support and encouraging words from friends.” Journaling even increased the effort to rely on friends and family for one mother. She stated, “I tried to get a lot done on my own and I don't always rely on other people... and I really made a concerted effort you know to rely on friends and family a bit more...”

Seeking professionals and experts was also mentioned as a strategy to decrease frustration when solving problems related to scheduling or health services. One participant stated, “Scheduled appointment for <child> at hospital for CT of chest. Frustrated with schedule person about getting test done. Talked to home care nurse to help solve schedule issue.” Seeking help from professionals also allowed mothers to decrease their stress load and relax. One mother stated, “It is really stressful, ‘cause most of the time you have to explain why you're calling and oh my god. Well anyways I had them page a few more times. Finally, they answered the page. Turned out it was <access liaison> who I love... She is phenomenal... it was a relief to just have relied, or it's the whole relying on someone else, seeking professional expert help... If I had done it myself, I would have been so strict on what to accept... the whole process is more relaxed.”

Organizing daily activities was the most frequently recorded personal resourcefulness skill. Mothers mentioned that to-do lists, checking completed items off of lists and organizing daily activities decreased stress levels. One participant stated, “Organize daily activities... what I've done in changing that is I've allowed myself to organize them so I focus on what's really important... I think one of the reasons I engaged so much with this is because I needed something like this.” Another participant stated, “The to-do list helped immensely! ... But today I had a peace of mind because I had it all written down and was able to check off items as they were completed.” Another participant stated, “Organized daily activities... and sometimes just writing them down and actually thinking about, ‘Okay, how can I organize it? It helped to relieve stress, ‘cause you know I could check things off the list and you know not worry about it all day.” Organizing daily activities also allowed mothers to focus on important daily tasks. One mother stated, “I mean, you know if I look specifically, I think organize daily activities, I think what I've done in changing is that I've allowed myself to organize them so I focus on what's really important.”

The use of positive self-talk was also recorded in journals as a personal resourcefulness skill used to make it through tough days and stressful situations. One participant stated, “I feel like I am in control of this break, unlike others in the past.” Another participant stated, “I really did a good job managing things today.” Reframing the situation positively was also a frequently recorded personal resourcefulness skill. One participant stated, “When we are unable to do a desired activity we always say that it is better to be home than at the hospital.” Other participants stated they understood reframing the situation positively as looking at life from a positive perspective overall. One participant stated, “Positive reinforcement, I try to do that. Just on a daily basis to try to like just keep everything positive.”

4. Discussion

Findings from this study indicate that mothers with technology-dependent children recorded each of the social and personal resourcefulness skill strategies in their daily journals. Content analysis from exit interviews and journals supported the feasibility, acceptability and fidelity of daily journaling for reinforcement of RT in this population.

The number of days journaled is similar to those in previous studies. The average number of days journaled was 23.2 which is more than in previous studies. In a study of RT in grandmothers raising grandchildren, grandmothers journaled an average of 17.65 days and caregivers of dementia patients journaled an average of 22.66 days (Zauszniewski, Lekhak, Napoleon & Morris, 2016; Zauszniewski et al., 2013). In a pilot study of online resourcefulness training, grandmothers journaled an average of 20 days, and those who consistently journaled did so for 25 of 28 days (Musil, Zauszniewski, Burant, Toly & Warner, 2016). Thus, there is some convergence about the enactment fidelity of daily journaling as a component of Resourcefulness Training (Zauszniewski, Musil, Burant, Standing, & Au, 2014). However, the mean number of words journaled in this study (3319.2 words) was similar to previous studies. In the grandmother study the average number of words was 3916 per journal and in the caregivers of dementia patients study the average number of words was 3197.85 (Zauszniewski et al., 2016; Zauszniewski et al., 2013).

Although some participants found journaling to be time-consuming and an additional activity in their busy day, they found it beneficial overall. These findings are similar to findings from previous RT journaling studies. In one study, participants reported that finding time to practice skills and remembering to record in journals daily were common complaints (Musil et al., 2016; Zauszniewski et al., 2016). Additionally, feelings of stress from journaling at the beginning of a previous study was relieved by the end of the intervention (Zauszniewski et al., 2013).

One surprising finding was that two mothers found the journals too private to return to the researchers. One mother reported that she felt this study is beneficial to the medical community but journaling was uncomfortable for her. She felt that sharing her private thoughts about caring for her technology-dependent child was invasive and should not be permanently logged—she did not want her child to someday read the journal entries. She believed focusing on the positives of caring for her child is more beneficial. The findings from our study are similar to previous findings in the literature. In other studies using RT journaling, caregivers have expressed concerns about privacy and family members reading the journals as well as sharing private feelings (Zauszniewski et al., 2016; Zauszniewski et al., 2013). Other studies found that one of the barriers to successful journaling in research studies is that some participants reported feeling exposed, vulnerable and anxious in regards to reporting the intimate details of their lives (Hayman, Wilkes & Jackson, 2012). Participants also reported worry of negative judgment from researchers based on their journal entries (Hayman et al., 2012). These findings on feelings related to privacy and journaling are similar to the feelings reported by two mothers in our study.

Relying on family and friends was found to be the most common help-seeking skill; this is congruent with previous findings in the literature. Social support has been shown to be one of the most important family resources and positively mediates the effect of a child's disability on family adaptation (Migerode, Maes, Buysse, & Brondeel, 2012). Parents of children with complex health conditions who did not have social support systems felt nervous about negative views from others and were socially isolated—these families would have benefitted from a social support network to rely on (Grant et al., 2013).

Our findings indicated that the second most common help-seeking skill was seeking support from professionals or experts which differs from previous findings in the literature. Most adults with chronic conditions seek support from non-professionals and only turn to clinicians for information about pharmacological treatments (Kuehn, 2016). More adults seek support from peers than from medical professionals (Kuehn, 2016). Those with rare conditions and complex chronic conditions are also likely to see support from online resources or peers over professionals (Kuehn, 2016). On the other hand, parents of children with complex chronic conditions needs, including children dependent on medical technology, are often considered to be the experts by healthcare professionals (de Geeter, Poppes & Vlaskamp, 2002; Kingsnorth, Gall, Beayni & Rigby, 2011). A “family centered” model of care is commonly used by healthcare professionals for children with complex chronic conditions (de Geeter et al., 2002; Kingsnorth et al., 2011). This model includes parents as part of the medical expert team for making healthcare decisions (de Geeter et al., 2002; Kingsnorth et al., 2011). Also, parents of children with complex chronic conditions needs have been successful in learning important care information from other expert parents of children with similar healthcare needs (de Geeter et al., 2002; Kingsnorth et al., 2011). In contrast, parents do not always feel confident in providing care and treatments for their child and may not use effective coping skills. Parents may be hesitant to seek help from professionals because it causes anxiety and overwhelming feelings (Hummelinck & Pollock, 2006). However, these parents often do not use positive coping strategies and are less likely to use resourcefulness skills (Hummelinck & Pollock, 2006).

Organizing daily activities was the most common personal resourcefulness (self-help) skill which matches previous findings in the literature. Single parents of children with complex chronic conditions reported that their families do better with structure and routine (Brown et al., 2008). Additionally, mothers of ventilator dependent children reported that in order to seek normality, their families often created common routines (Carnevale, Alexander, Davis, Rennick & Troini, 2006).

Reframing the situation positively was another frequently used RT skill. Results from previous studies also support the effectiveness of reframing the situation positively. Positive cognition encompasses the skill of reframing the situation positively (Bekhet, Johnson, & Zauszniewski, 2012). A study of the effects of positive cognitions on caregivers of children with Autism found that positive thinking patterns helped to increase their ability to manage daily activities and provided caregivers with a sense of meaning in life and empowerment (Bekhet et al., 2012). Another study found that positive cognitions in women with type 2 diabetes decreased severity of depressive symptoms (Bekhet et al., 2012).

4.2. Limitations and Future Research

The generalizability of this study may be restricted due to several limitations. First, the study focused on a relatively uncommon but complex population: mothers of technology-dependent children. These mothers' needs differ from other caregivers to children, and their challenges and stresses likely elicit different strategies than mothers of children without severe health problems. Further, minority and rural populations and those living in poverty were not well represented in the sample. Thus, the strategies used to evaluate fidelity and feasibility may not reflect the range of situations and resourcefulness skills' applications that mothers of technology-dependent children might face, including practical challenges of access and transportation. Finally, external validity is limited due to the small sample size. Despite these limitations, the study makes an important contribution about the feasibility, acceptability and fidelity of the journaling component of resourcefulness training.

Future research related to confounding factors for the RT intervention effect on level of depressive symptoms, anxiety, and stress should include information on intake of psychotropic medications as well as other self-management strategies such as prayer, meditation, and counseling.

5. Conclusions

Journaling is a feasible and acceptable strategy to reinforce the components of the RT intervention. This technique can provide evidence for the fidelity of this intervention. It can be used by pediatric nurses to reinforce and promote resourcefulness skill use in parents of technology-dependent children.

Acknowledgements

This study was supported by the National Institutes of Health (grant 5T32NR009761-05), the Clinical and Translational Collaborative at Case Western Reserve, Dahms Clinical Research Unit (grant UL 1RR024989). Funding was provided by the Frances Payne Bolton School of Nursing, Case Western Reserve University. At the time the study was conducted the first author was an NIH Postdoctoral Fellow at Case Western Reserve University. We would like to give a special thank you to research assistants Kari Gali, RN, MSN, CPNP, Nick Frank, BSN, RN, and Melissa Moore, BSN, RN.

References

- Bekhet AK, Johnson NL, Zauszniewski JA. Effects on resilience of caregivers of persons with Autism Spectrum Disorder: The role of positive cognitions. *Journal of the American Psychiatric Nurses Association*. 2012; 18(6):337–344. doi.org/10.1177/1078390312467056. [PubMed: 23139377]
- Brown RT, Wiener L, Kupst MJ, Brennan T, Behrman R, Zeltzer L. Single parents of children with chronic illness: An understudied phenomenon. *Journal of Pediatric Psychology*. 2008; 33(4):408–421. [PubMed: 17906331]
- Buda B. The writing cure: How expressive writing promotes health and emotional well-being. *Crisis*. 2002; 23(3):139.
- Carnevale FA, Alexander E, Davis M, Rennick J, Troini R. Daily living with distress and enrichment: The moral experience of families with ventilator-assisted children at home. *Pediatrics*. 2006; 117(1):e48–60. (1). doi.org/10.1542/peds.2005-0789. [PubMed: 16396848]
- de Geeter KI, Poppes P, Vlaskamp C. Parents as experts: The position of parents of children with profound multiple disabilities. *Child: Care, Health and Development*. 2002; 28(6):443–453.

- Grant S, Cross E, Wraith JE, Jones S, Mahon L, Lomax M, Hare D. Parental social support, coping strategies, resilience factors, stress, anxiety and depression levels in parents of children with MPS III (Sanfilippo Syndrome) or children with intellectual disabilities (ID). *Journal of Inherited Metabolic Disease*. 2013; 36(2):281–291. doi.org/10.1007/s10545-012-9558-y. [PubMed: 23151683]
- Hayman B, Wilkes L, Jackson D. Journaling: Identification of challenges and reflection on strategies. *Nurse Researcher*. 2012; 19:27–31.
- Hummelink A, Pollock K. Parents' information needs about the treatment of their chronically ill child: A qualitative study. *Patient Education and Counseling*. 2006; 62:228–234. doi.org/10.1016/j.pec.2005.07.006. [PubMed: 16139981]
- Kingsnorth S, Gall C, Beayni S, Rigby P. Parents as transition experts? Qualitative findings from a pilot parent-led peer support group. *Child: Care, Health and Development*. 2011; 37(6):833–840. doi.org/10.1111/j.1365-2214.2011.01294.x.
- Klein K, Boals A. Expressive writing can increase working memory capacity. *Journal of Experimental Psychology*. 2001; 130(3):520–533. [PubMed: 11561925]
- Kuehn BM. Patients go online seeking support. *Practical Advice on Health Conditions*. 2016; 305(16): 2010–2011.
- Lepore, SJ.; Greenberg, MA.; Bruno, M.; Smyth, JM. Expressive writing and health: Self-regulation of emotion-related experience, physiology, and behavior.. In: Lepore, SJ.; Smyth, JM., editors. *The writing cure: How expressive writing promotes health and emotional well-being*. American Psychological Association; Washington, DC: 2002.
- Migerode F, Maes B, Buysse A, Brondeel R. Quality of life in adolescents with a disability and their parents: The mediating role of social support and resilience. *Journal of Developmental and Physical Disabilities*. 2012; 24(5):487–503. doi.org/10.1007/s10882-012-9285-1.
- Musil CM, Zauszniewski JA, Burant C, Toly VB, Warner CB. Evaluating an online resourcefulness training intervention pilot test using six critical parameters. *The International Journal of Aging and Human Development*. 2016; 82(1):117–135.
- Office of Technology Assessment. *Technology-dependent children: Hospital care vs. home care: A technical memorandum*. Congress of the United States; 1987.
- Pennebaker JW. Writing about emotional experiences as a therapeutic process. *Psychological Science*. 1997; 8(3):162–166.
- Radloff LS. The ces-d scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1:385–401.
- Richards, RG. *The source for learning and memory strategies*. LinguiSystems, Inc.; Chicago Heights, OK: 2003.
- Spratling R. Defining technology dependence in children and adolescents. *Western Journal of Nursing Research*. 2015; 37(5):634–51. doi.org/10.1177/0193945914526002. [PubMed: 24622153]
- Smyth J, Helm R. Focused expressive writing as self-help for stress and trauma. *Journal of Clinical Psychology*. 2003; 59(2):227–235. [PubMed: 12552631]
- Toly V, Musil C, Carl J. Families with children who are technology dependent: Normalization and family functioning. *Western Journal of Nursing Research*. 2012a; 34:52–71. <http://dx.doi.org/10.1177/0193945910389623>. [PubMed: 21148462]
- Toly VB, Musil CM, Carl JC. A longitudinal study of families with technology-dependent children. *Research in Nursing & Health*. 2012b; 35:40–54. <http://dx.doi.org/10.1002/nur.21454>. [PubMed: 22161731]
- Toly V, Musil C. Factors related to depressive symptoms in mothers of technology-dependent children. *Issues in Mental Health Nursing*. 2015; 36:518–27. <http://dx.doi.org/10.3109/01612840.2015.1009662>. [PubMed: 26309171]
- Toly VB, Musil CM, Zauszniewski JA. Resourcefulness training intervention: A promising approach to improve mental health of mothers with technology-dependent children. *Applied Nursing Research*. 2014; 27(1):87–90. doi.org/10.1016/j.apnr.2013.11.003. [PubMed: 24355417]
- Zauszniewski JA, Eggenschwiler K, Preechawong S, Roberts BL, Morris DL. Effects of teaching resourcefulness skills to elders. *Aging & Mental Health*. 2006; 10:404–412. [PubMed: 16798633]

- Zauszniewski, JA. Resourcefulness.. In: Fitzpatrick, JJ.; Kazer, MW., editors. Encyclopedia of nursing research. 3rd ed.. Springer; New York, NY: 2012. p. 448-449.
- Zauszniewski JA, Musil CM. Interventions for grandmothers: Comparative effectiveness of resourcefulness training, HRV biofeedback, and journaling. *Biofeedback*. 2014; 42:121–129.
- Zauszniewski JA, Musil CM, Burant CJ, Au T-Y. Resourcefulness training for grandmothers: Preliminary evidence of effectiveness. *Research in Nursing & Health*. 2014; 37:42–52. doi: 10.1002/nur.21574. [PubMed: 24277351]
- Zauszniewski JA, Musil CM, Au TA. Resourcefulness training for grandmothers: Feasibility and acceptability of two methods. *Issues in Mental Health Nursing*. 2013; 34(6):435–441. doi: 10.3109/01612840.2012.758208. [PubMed: 23805928]
- Zauszniewski JA, Musil CM, Burant CJ, Standing TS, Au T. Resourcefulness training for grandmothers raising grandchildren: Establishing fidelity. *Western Journal of Nursing Research*. 2014; 36(2):228–244. doi:10.1177/0193945913500725. [PubMed: 23982519]
- Zauszniewski JA, Lekhak N, Napoleon B, Morris DL. Resourcefulness training for women dementia caregivers: Acceptability and feasibility of two methods. *Issues in Mental Health Nursing*. 2016; 37:249–256. doi.org/10.3109/01612840.2015.1119222. [PubMed: 26980158]

Table 1Sample Characteristics of Mothers ($N=22$).

	<i>n</i>	(%)
Race/Ethnicity		
Hispanic	0	(0)
African American	3	(14)
Caucasian	18	(82)
Asian	1	(4)
Age of Mother (years)		
33-39	8	(36)
40-45	8	(36)
46	6	(28)
Family Income		
\$40 K	5	(23)
\$40K-\$80 K	10	(45)
\$80 K	7	(32)

Table 2Sample Characteristics of Technology-Dependent Children ($N=22$).

	<i>n</i>	(%)
OTA (1987) Group		
Group 1	6	(27)
Group 2	1	(5)
Group 3	15	(68)
Age of Child (years)		
5	6	(27)
6-10	9	(41)
11-16	7	(32)

Note: Office of Technology Assessment (OTA) 1987

Table 3

Journal Word Counts

Variable	Resourcefulness Training Group (n=11)		Comparison Group (n=8)		Both Groups (n=19)	
	Mean	Median	Mean	Median	Mean	Median
Number of Words per Journal	3313.1	2796	3243.8	3432	3319.2	3017

Table 4

Resourcefulness Skills used in Journaling: Resourcefulness Training Intervention Group (n=11)

Social	Total # of entries	Mothers who reported (%)	Personal	Total # of entries	Mothers who reported (%)
Rely on family/friends	115	(100)	Organize daily activities	103	(90.1)
Exchange ideas with others	54	(100)	Use positive self-talk	72	(100)
Seek professionals or experts	76	(90.1)	Reframe the situation positively	56	(90.1)
			Change from usual reaction	39	(90.1)
			Explore new ideas	33	(81.8)
Total social help-seeking	245		Total personal self-help seeking	303	

Table 5

Frequency of Resourcefulness Skill Use in Journals: Resourcefulness Training Intervention Group (n=11)

Resourcefulness Skill	Total Number of Times Used (All RT Mothers)	Mean Number of Times Used per Mother	Median Number of Times Used per Mother
Rely on family/friends	115	10.5	11
Exchange ideas with others	54	4.9	2
Seek professionals or experts	76	6.9	6
Total Social Resourcefulness Skills	245	22.3	19
Organize daily activities	103	9.4	5
Use positive self-talk	72	6.5	6
Reframe the situation positively	56	5.1	6
Change from usual reaction	39	3.5	2
Explore new ideas	33	3	2
Total Personal Resourcefulness Skills	303	27.5	18

Note: Resourcefulness Training (RT)