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Powerful Tools for Caregivers Online: An Innovative Approach to Support Employees

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SUMMARY. Family caregiving is a large and growing concern in the American workplace. This article describes a pilot program aimed at enhancing the self-efficacy and minimizing the distress of employees who care for relatives with chronic medical conditions. A six-week, community-based education program was adapted to enable these family caregivers to take part in an interactive web-based program. Elements of this innovative program are described along with results of evaluations completed by 49 participants at 3 points in time. This exploratory study found the web-based program to be an effective intervention for employees who are family caregivers and holds promise as an attractive alternative to the traditional classroom approach to caregiver education and support.

KEYWORDS. Caregivers, intervention, Internet, web-based learning, distance education, stress management
INTRODUCTION

Several national studies have described the enormous impact of family caregiving on the ability of employees to effectively manage their work and personal responsibilities. The National Alliance for Caregiving and AARP (2004) conducted a nationally representative survey and estimated that there are 44.4 million caregivers age 18 and older in the U.S. who provide unpaid care to an adult family member or friend. The survey showed that almost 6 in 10 caregivers (59%) either work or have worked while providing care and 62% of caregivers report having had to make some work-related adjustments ranging from going in late and leaving early to having to give up work entirely. More than 40% had to reduce their work hours or responsibilities, or leave the work force altogether. The MetLife Juggling Act Study: Balancing Caregiving with Work (1999) showed that employed caregivers incur significant losses in career development, salary and retirement income, and substantial out-of-pocket expenses as a result of caregiving obligations. Moreover, caregiving responsibilities seriously affect the productivity of caregivers, particularly because of altered work schedules. Both male and female children of aging parents make significant changes at work in order to accommodate caregiving responsibilities (MetLife Mature Market Institute, 2003).

The economic impact of family caregiving on business is also substantial, although cost estimates vary. The MetLife Juggling Act Study (1997) revealed that U.S. businesses lose as much as $29 billion annually due to family caregiving. The Alzheimer’s Association estimates that the cost of Alzheimer’s disease alone is $36.5 billion annually in terms of caregivers’ lost productivity, absenteeism, and turnover (Koppel, 2002). The costs of family caregiving to employees and their employers are high and will grow dramatically in the coming decades with the “graying of America.” Caring for relatives with chronic illnesses not only adversely affects workers and the workplace, it also induces significant levels of stress. Although the caregiver role can be rewarding, it has also been linked with numerous physical and mental health, financial, and social problems as well as an increased risk of mortality (Beach et al., 2000; Ory et al., 1999; Vitaliano et al., 2003).

In the United States, the Internet has become the primary source of health information for individuals with health care needs and their family caregivers. According to a survey by the Pew Internet and American Life Project (2005), 8 in 10 Internet users or about 95 million American adults have investigated a variety of health information on average of 16
topics per search, and most of these individuals have also researched a medical condition on behalf of a loved one. The National Alliance for Caregiving and AARP (2004) survey found that the Internet is the leading source of health information for caregivers (29%), compared to doctors (28%) and other health professionals (10%). The Internet has also spawned an ever-increasing number of online support groups and electronic message boards for individuals with chronic illnesses and their family caregivers (White & Dorman, 2001; Glueckauf, 2005).

In spite of the growing trend toward using the Internet for health-related information and support, few studies have examined the utility of the Internet for caregiver information and education. Researchers documented positive results in web-based interventions involving parents of sick children (Gray et al., 2000; Krishna et al., 2003) and family caregivers of heart transplant recipients (Dew et al., 2004), traumatic brain injury patients (Rotondi et al., 2005), and persons suffering from Alzheimer’s disease, Parkinson’s disease, and stroke (Bass et al., 1998; Beauchamp et al., 2005; Marziali et al., 2005). These studies suggest that web-based education and support may also improve the effectiveness of caregivers in managing the health of chronically ill relatives and may improve confidence in the caregiving role. This article describes a web-based program for employed caregivers aimed at improving their self-care and reducing the negative work-related outcomes associated with family caregiving.

BACKGROUND OF PROGRAM

The American Business Collaboration (ABC) for Quality Dependent Care, a groundbreaking corporate initiative comprised of eight major companies, was launched in 1992 in response to the increased number of employees who must arrange care for family members in order to be fully productive at work. These companies have made significant investments in communities where their employees live and work in order to improve the quality and supply of child and elder care programs and services. In ABC company focus groups and surveys conducted by WFD Consulting which administers the ABC, employees identified support groups as a means of assisting them in their caregiver role. However, the ABC companies found out through experience that on-site support groups often do not work for a variety of reasons: employees cannot commit the time, do not feel comfortable identifying
themselves as a caregiver, or may not be located at their company’s workplace due to telecommuting or working offsite with clients.

In 2004, three companies of the ABC (Exxon Mobil Corporation, IBM and Texas Instruments) funded Mather LifeWays, a nonprofit organization based in Evanston, Illinois, to create an online version of its caregiver education program, Powerful Tools for Caregivers (PTC). In its original format, PTC is a community-based education program aimed at providing family caregivers with the skills necessary to better care for themselves while caring for a relative or friend with a chronic medical condition. PTC is presently taught by trained class leaders in limited areas of 18 states. Research conducted examining hundreds of caregivers participating in PTC in Oregon and Illinois demonstrated a variety of positive outcomes including decreased depression, improved self-confidence, and increased engagement in relaxation and exercise activities (Boise et al., 2005; Kuhn et al., 2003; Edelman et al., 2006).

The traditional PTC classes are held weekly over a period of six weeks in groups of 10 to 15 participants at locations such as churches, senior centers, and civic centers. Classes are two and a half hours in length and are typically led by professionals in fields of health and human services using a standardized curriculum. Table 1 is a synopsis of the content covered in each of the six classes. Participants learn how to: (1) locate community resources; (2) better manage their stress; (3) communicate more effectively; (4) cope with their emotions; and, (5) take steps to care for themselves through weekly action plans. Each participant receives a supplemental guide, The Caregiver Helpbook, written especially for the course (Schmall et al., 2000).

The overall goal of PTC Online is to enable participants to better care for themselves while caring for their older relatives with chronic medical conditions such as stroke, Alzheimer’s disease, or Parkinson’s disease. PTC is rooted in Bandura’s social cognitive theory (1977, 1987, and 1997) that posits that a high degree of self-efficacy will increase the frequency of certain behaviors, particularly personal health promoting behaviors. Self-efficacy is related to one’s belief that new attitudes and behaviors can be achieved. These expectations and beliefs affect one’s personal choices that may be modified by skills training. Self-efficacy principles have been successfully applied to patients with chronic diseases such as arthritis (Lorig et al., 1998; Mendes de Leon et al., 1996; O’Leary, 1985), as well as other diseases, through the Chronic Disease Self-Management Program developed at Stanford University (Lorig et al., 2001). PTC applies these same principles with activities specifically suited to the self-care needs of family caregivers.
ABC asked Mather LifeWays to develop, implement, and evaluate an online version of PTC for 200 employees of the three sponsoring companies. PTC Online was seen as an innovative means of supporting employees who have little or no time to take part in traditional support groups in the workplace or other community settings. The online format—available 24 hours a day, seven days a week—was thought to fit the needs of employed caregivers who needed the convenience of participating in PTC at any time and from any place. Moreover, the self-help focus of PTC in an educational format might prove attractive to employees who otherwise might not take part in support groups.

### TABLE 1. Synopsis of PTC Classes

**Class 1—Taking Care of You:** Principles of self-care and responsibility are introduced. Caregivers identify tools and resources to meet their self-care goals. Challenges of caregiving and the significance of self-care are dramatized through a video. Caregivers identify ways to locate community resources including information about one’s family member with a medical condition. A personalized plan for self-care during the coming week is written and shared.

**Class 2—Identifying and Reducing Personal Stress:** Steps are presented for effective stress management. Caregivers learn how to change negative self-talk to positive self-talk and practice relaxation exercises. An action plan for the coming week is written and shared.

**Class 3—Communicating Feelings, Needs and Concerns:** Caregivers learn how to communicate feelings, needs and concerns more effectively by using “I” messages. Through dramatizations, caregivers experience the impact of “you” messages. Progressive muscle relaxation is practiced. An action plan for the coming week is written and shared.

**Class 4—Communicating in Challenging Situations:** Caregivers learn three communication tools: assertiveness, Aikido, and DESC. With Aikido, caregivers learn to find “common ground” with another person. With DESC (Describe, Express, Specify, Consequence), caregivers further learn how to set limits. Another progressive muscle relaxation is practiced and an action plan for the coming week is developed.

**Class 5—Learning from our Emotions:** The focus is on identifying and applying constructive tools for dealing with difficult feelings, especially depression and anger. Another progressive muscle relaxation is practiced and an action plan for the coming week is developed.

**Class 6—Mastering Caregiving Problem-Solving:** The focus is on the internal emotional process caregivers go through when they experience a life role change. Tools for dealing with changes and for making tough decisions are discussed, including a seven-step decision-making model and family meetings. “Tools of optimism” are presented. Caregivers acknowledge their accomplishments and develop a long-term action plan.

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METHODOLOGY

Design and Intervention

Similar to the community-based format, PTC Online is six weeks in length. Online material consists of text, graphics, video, audio, and interactive exercises. Aside from a computer with Internet access, no special software or hardware is required for participation, and no technological expertise is necessary. Prior to the course, each participant logs on to a password-protected website. An online tutorial and manual are offered prior to the six-week course to learn how to use the simple navigational tools. For 1 to 2 hours weekly, participants read the course content, watch a video that dramatizes the importance of self-care, and listen to relaxation tapes. At the end of each class, participants can view or download selected chapters of *The Caregiver Helpbook* to supplement online coursework. Participants interact with each other and a trained facilitator in a discussion board; as many as 25 participants are enrolled at a time in order to foster interaction. In the pilot program, two-weekly live optional web chats and telephone conferences were offered to promote interaction. Following completion of the course, for one year participants receive monthly electronic newsletters that contain brief articles that reinforce the use of self-care tools and address other aspects of caregiving.

Like many work-life programs, PTC Online was made available to employees of the three sponsoring companies on a private, confidential basis through a vendor; in this case, Mather LifeWays. Hoping to target employee caregivers, and recognizing that many caregivers do not self-identify, e-mail messages and posters at worksites asked employees if they helped an older relative or friend with errands, personal care, or transportation, or if they provided companionship, emotional or financial support to a relative living either nearby or at a distance. These promotional materials directed employees to the ABC web site to enroll in the free course, where they were assured that their participation would remain confidential.

Participants were asked to complete web-based surveys with standardized measures examining the impact of the course on their well-being and on work-related outcomes at three points in time: pre-course; post-course; and, six-months post-course. Participants were also asked to complete a qualitative evaluation of the course to find out which components of the course were most useful and which parts required improvement. Participation in the evaluation was strictly voluntary. All
participants were assured of confidentiality and informed that results of the evaluation would only be shared in aggregate form. Informed consent procedures for this exploratory study were approved by the Institutional Review Board of Mather LifeWays.

**Sample**

A total of 217 employees of the three sponsoring companies requested to register for PTC Online through the ABC website. Those expressing interest were then sent an e-mail outlining details of PTC Online (i.e., length of the course, estimated number of hours to dedicate, voluntary evaluation component, overview of content, etc.). Of those, 176 employees (81%) accepted the invitation to participate in the program evaluation component and completed a baseline (pre-course) web survey. Of those who completed a baseline survey, 21 employees un-enrolled from the course (12%) typically due to lack of time (i.e., job/home commitments, increased caregiving responsibilities, etc.) rather than lack of interest in the course itself. Of the 155 employees who participated in the course, 49 (31.6%) completed follow-up surveys (immediate post-course and 6-month post-course). On average, participants completed 4 of the 6 weekly sessions.

**Measures**

A web survey was developed using E-Listen software and was comprised of several standard measures. Wellness-focused measures examined exercise, resilience, self-efficacy, and self-reported health status. *Involvement in exercise and relaxation activities* was assessed by a 3-item instrument and measured on 5-point scales (from “never” to “more than five times a week”). Internal consistencies for this measure in the present study exceeded 0.85 at all data points (baseline, post, 6-months post). *Resilience* was measured by a 4-item instrument developed by WFD Consulting, Inc. targeting aspects of a healthy lifestyle scored on 5-point scales (from “always” to “never”). Internal consistencies in the present study exceeded 0.68 for this measure. *Self-efficacy* was assessed by the 5-item General Perceived Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) measuring global aspects of one’s self-confidence to manage problems, find solutions, and accomplish goals, and scored on 5-point scales (from “strongly agree” to “strongly disagree”). Internal consistencies for this measure exceeded 0.74, similar to published studies across various populations (Scholz et al., 2002).
Self-reported health status was measured on a single 5-point scale (from “excellent health” to “poor health”).

Key work-related measures were also examined. Work productivity interference was evaluated by a 10-item instrument (WFD Consulting, Inc.) that assesses how frequently personal or family demands interfere with aspects of work responsibilities. Those items employ 5-point scales (from “very often” to “never”). Internal consistencies for this measure in the present study were very high, exceeding 0.95 at all data points. Job stress and burnout were evaluated on a 7-item instrument and measured on 5-point scales ranging from “strongly agree” to “strongly disagree.” This instrument was developed and validated by WFD Consulting, Inc. (Richman et al., 1998). Internal consistencies for this measure are in excess of 0.80, similar to previous workforce studies by WFD Consulting.

A third set of measures addressed the impact of caregiving related to one’s role as a caregiver and psychological aspects of caregiving. Pearlin’s Caregiver Self-Concept Scales measure three dimensions of one’s self-concept as a caregiver including gain, loss, and competence as well as overall feelings about caregiving (Skaff & Pearlin, 1992). The subscales of caregiver gain consist of 4-items, caregiver loss involves 2-items, caregiver competence includes 2-items, and overall feelings about caregiving consist of 3-items. The items employ 4-point scales ranging from “very much” to “not at all.” Internal consistencies for the present study were in excess of 0.76, similar to published reports of reliability. Depression was assessed with the Center for Epidemiologic Studies Short Depression Scale (CES-D10; Radloff, 1977), a well-validated 10-item instrument with a 4-point scale (from “rarely or none of the time” to “all of the time”). Internal consistencies for the present study exceeded 0.83, comparable to published reliability data for caregiver samples (Lorig et al., 2001)

Dose Effects

Participation in various PTC Online activities was examined to determine if taking part in a high, moderate, or low level of activities influenced outcomes. The number of weekly lessons, asynchronous discussions, live chats, and telephone conference calls were combined into a “Total Dosage” score ranging from 0 to 24 (one point for each activity per week: 4 activities/week × 6 weeks = maximum of 24). Total Dosage was categorized as Low Dose (0-3), Moderate Dose (4-8), and High Dose (9-24) based on cut-points for three equal groups from the sample.
Analysis

We first compared baseline scores between participants who completed only pre-course surveys and those who completed post-course surveys, followed by comparing baseline scores of those who un-enrolled during the course to those who participated. Repeated measures analyses of variance were calculated to assess changes in the study measures over time. Correlations were then calculated among dosage effects for each PTC activity (i.e., weekly lessons, discussions, chats, and conference calls) and change scores on each measure to assess if the degree of participation in PTC activities was related to change scores. Finally, stepwise multiple regressions were performed to identify factors predictive of healthy outcomes defined as measures of resilience, self-reported health, and exercise/relaxation activities.

RESULTS

Demographics

Demographic characteristics of participants and their care recipients are summarized in Table 2. The majority of participants were 45 to 54 years of age (54.3%), female (71%), Caucasian (83%), and caring for elderly parents or in-laws (89%). About 95% of participants worked full-time, and 47% had a spouse or partner also working full-time. Thirty-six percent of participants also reported caring for children living at home. About one-third of participants were relatively new to caregiving, having provided care to their older relatives for less than one year. Over 40% provided one to five hours of direct care weekly, while 27% provided eleven or more direct hours of care weekly. Over 12% of participants indicated they provided no direct care hours weekly to their older relatives. These participants may have been “long distance” caregivers or may have hired help, either at the home or through a senior living residence. There were no statistically significant differences on baseline measures between the “no direct care provided” respondents and those providing some degree of direct care, so further analyses combined all respondents.

Nearly 50% of care recipients were 80 years of age or older and 73% was female. Over 30% of care recipients lived alone, 25% lived with a spouse, and 23% lived with the caregiver participating in PTC Online. Arthritis, Parkinson’s disease, dementia, and diabetes were the top four
medical conditions of care recipients, according to caregivers. Half of care recipients reportedly had some degree of memory loss and 28% experienced memory loss “most or all of the time.”

**Preliminary Analyses**

Baseline scores were compared between participants who completed only pre-course surveys (n = 106) and those who completed post-course
surveys (n = 49). There were no significant differences between mean baseline scores of these two groups on wellness measures, job stress and burnout, and caregiver measures. There was a significant difference between mean baseline scores of the two groups related to caregiving responsibilities interfering with work productivity.

Participants who completed only pre-course surveys reported that caregiving responsibilities interfered with work productivity more often than enrollees who also completed post-course surveys ($t = 2.24, p = 0.004$). Comparing baseline scores of those who dis-enrolled (n = 21) during the course to those who participated, there were no significant differences between mean baseline scores on any measures.

**Changes in Measures Over Time**

Wellness, work-related, and caregiver measures were examined by univariate analyses of variance with time of measurement (pre-course versus immediate post-course versus 6-months post-course) as a within-subjects factor. Multivariate tests for the main effect of time of measurement were conducted for each measure using Pillai’s Trace, as this calculation is most robust to violations of assumptions to normality of data. For all statistically significant differences discussed below, Mauchly’s tests confirming sphericity assumptions were met. Post-hoc comparisons were performed using the Bonferroni adjustment for multiple pair wise comparisons. Table 3 summarizes results of repeated measures analyses with effect size indicated by partial eta squared.

**Wellness measures.** The PTC Online course was effective in improving participants’ involvement in exercise and relaxation activities, resilience, self-efficacy, and self-reported health status. Exercise and relaxation activity scores increased from a mean of 7.76 at baseline to a mean of 8.76 immediately following the course to a mean of 9.59 at 6-months post-course (main effect $F = 8.152, p = 0.001$). Pair wise comparisons of exercise and relaxation measures revealed no differences between baseline and post-course means ($p = 0.081$) or post-course and 6-months post-course means ($p = 0.161$). The 6-month post-course mean was significantly greater than the baseline mean ($p = 0.011$).

Resilience scores increased from a mean of 14.00 at baseline to a mean of 14.47 post-course to a mean of 15.35 at 6-months post-course (main effect $F = 4.939, p = 0.014$). Pair wise comparisons of resilience scores revealed no differences between baseline and post-course means ($p = 0.869$) or post-course and 6-months post-course means ($p = 0.207$).
The 6-month post-course mean was significantly greater than the baseline mean ($p = 0.018$).

Self-efficacy scores increased from a mean of 18.59 at baseline to a mean of 20.12 post-course and somewhat decreased to a mean of 19.41 at 6-months post-course (main effect $F = 5.817, p = 0.013$). Pair wise comparisons of self-efficacy scores found the post-course mean was significantly greater than baseline mean ($p = 0.009$). There were no differences between baseline and 6-month post-course means ($p = 0.916$) or post-course and 6-months post-course means ($p = 0.980$).

There was an improvement in self-reported health status scores from baseline to 6-months post-course, but the change was not statistically significant ($p = 0.620$).

Work-Related measures. PTC Online was effective in reducing participants’ job stress and burnout. Job stress and burnout scores decreased from a mean of 3.93 at baseline to a mean of 3.00 post-course to a mean of 2.87 at 6-months follow up (main effect $F = 5.347, p = 0.011$). Pair wise comparisons of job stress and burnout scores revealed significant increases from baseline to post-course means ($p = 0.045$) and from baseline to 6-months post-course means ($p = 0.040$). There were no differences between post-course and 6-month post-course means ($p = 0.980$).
There was an increase in work productivity scores from baseline to 6-months post-follow up, but the change was not statistically significant (p = 0.709).

Caregiver measures. PTC Online was also effective in increasing both participants’ overall feelings about caregiving and competencies as a caregiver. Overall feelings about caregiving scores increased from a mean of 9.35 at baseline to a mean of 10.06 post-course to a mean of 10.82 at 6-months post-course (main effect $F = 5.702$, $p = 0.008$). Pair wise comparisons of feelings about caregiving scores revealed no differences between baseline and post-course means ($p = 0.353$) or post-course and 6-months post-course means ($p = 0.308$). The 6-month post-course mean was significantly greater than the baseline mean ($p = 0.012$).

Caregiver competency scores increased from a mean of 6.35 at baseline to a mean of 6.65 post-course to a mean of 7.06 at 6-months post-course (main effect $F = 4.983$, $p = 0.013$). Pair wise comparisons of caregiver competency scores found no differences between baseline and post-course means ($p = 0.708$) or post-course and 6-months post-course means ($p = 0.269$). The 6-month post-course mean was significantly greater than the baseline mean ($p = 0.010$).

Changes over time in measures of caregiver gain ($p = 0.070$), caregiver loss ($p = 0.230$), and depression ($p = 0.116$) demonstrated some improvements, but results were not statistically significant.

Relationships Among Dosage Effects and Change Scores

Kendall’s tau correlation coefficients were calculated among dosage effects for each PTC activity (i.e., weekly lessons, Bulletin Board discussions, live chats, and conference calls) and change scores on each measure to assess if the degree of participation in PTC activities was related to change scores. Respondents who participated more often in live chats had significantly lower change scores for depression ($r = 20.350$, $p = 0.036$). Although not statistically significant, a tendency was noted for Moderate/High Dosage participants to report better outcomes across all measures ($p = 0.090$).

Predictors of Healthy Outcomes

Stepwise multiple regression was performed to identify factors predictive of healthy outcomes, measured by self-reported health and resilience. This analysis was based on Pearlin’s theoretical model of caregiving and the stress process (Pearlin et al, 1990). Pearlin’s model links the effects of
caregiver characteristics and resources to stressors and potential effects or outcomes. Caregiver characteristics, past experiences with caregiving, coping skills, and external resources influence how caregivers deal with stress in their lives. Pearlin identified various dimensions and sources of caregiver role strain that produce stressful outcomes. Occupation and other external responsibilities often produce cross-pressures between work and caregiver roles. Mediating conditions may explain why individuals exposed to similar stressors may respond differently. In the case of working caregivers, types and sources of work interference and job stressors and how workers react to these job stresses (i.e., resilience factors) may act as mediating factors. Pearlin’s model examines the effects or outcomes of caregiving in terms of health-related measures.

In the present study, a model was tested that examined predictors of self-reported health, caregiver competencies, exercise/relaxation activities, and self-efficacy as predictor (independent) variables as PTC Online content and activities target these concepts. Resilience, work productivity interference, job stress/burnout, and depression were treated as mediating factors in the analysis.

As shown in Figure 1, increased caregiver competencies and exercise/relaxation activities directly predicted improved self-report of health status. Decreased job stress/burnout, reduced work interference due to family responsibilities, and increased resilience were also medi-

FIGURE 1. Multiple Regression Model of Factors Predicting Caregivers’ Self-Reported Health (standardized beta coefficients indicate relative importance of variable as predictor or mediator of self-reported health)
ating factors for the effect of increased caregiver competencies on improving self-reported health status (adjusted $r^2 = 0.291$, $F = 19.996$, $p = 0.001$).

**DISCUSSION**

The evaluation of PTC Online provides strong evidence about the benefits of a web-based, self-care education program for employed caregivers of older adults. Regarding wellness outcomes, participants reported greater involvement in exercise and relaxation activities, improved resilience, and increased self-efficacy after participating in PTC Online, and these results were sustained 6-months post-course. With regard to work-related outcomes, participants experienced continued reductions in job stress and burnout as a result of participating in the program. Additionally, participants reported more positive feelings about their caregiving roles and increased competencies as caregivers over time. The overall effect size was moderate for outcomes of the program evaluation.

In support of the benefits of PTC Online, caregiver competencies, self-efficacy, and exercise/relaxation activities predicted improvements in self-reported health status and caregiver resilience. Caregivers reported increased resilience in meeting daily life challenges as well as reductions in work productivity interference due to caregiving, job stress/burnout, and depression. These four factors mediated the positive impact of PTC Online in improving caregiver competencies and perceived self-efficacy.

Because of the small number of participants who completed post-course surveys, the sample size was inadequate to determine the impact of “dosage effects.” Due to the relatively low level of participation in the weekly live web chats and phone conferences, these features are not likely to contribute to the effectiveness of PTC Online. On average, participants completed four of the six weekly web sessions, indicating that full participation in the educational program is not necessary to benefit.

Limitations of this intervention study are noteworthy. Results may not be generalizable because participants in PTC Online were motivated help-seekers and they may not be representative of employed caregivers in non-corporate settings. Other limitations include the relatively small number of participants and lack of a comparison group. A delayed intervention group or wait list group would have been ideal but this option was not feasible in light of the objectives of this service-ori-
ented project. Attrition is also a key limitation, yet not surprising given the hectic pace of work reported by participants and their caregiving demands. In the future, some type of incentive might improve retention in both the course and the evaluation.

Further cost-benefit analysis in terms of outcomes for employees and care recipients would be useful. For example, it is conceivable that PTC Online may play a role in lowering healthcare costs of caregivers. The potential financial benefits of PTC Online require additional study, and in light of the growing number of caregivers in the workplace, such effort will become increasingly important.

Participants in PTC Online derived many of the same benefits reported by participants in two populations of caregivers in Oregon and Illinois who took part in the community-based version of PTC (Boise, Congleton & Shannon, 2005; Edelman et al., 2006). This finding is important in that many PTC Online participants would not likely take part in the community-based version of PTC due to heavy work and family obligations. Compared to adult children caregivers who took part in the community-based version of PTC, the PTC Online participants were younger, had more minor children living at home, and worked more hours per week.

Although PTC Online may be an attractive alternative to the community-based version of PTC, attrition is a challenge in both venues, with about one in five participants unable to complete four or more classes within the allotted six weeks. However, PTC Online participants have access to the course for a full year following their initial registration, enabling them to continue at their own pace or to revisit lessons. About 30 percent of registrants logged back in at a later date to further examine and utilize the course materials and tools. This opportunity for extended participation obviously does not exist in the time-limited, community-based option.

PTC Online is an effective and first-of-its kind course that uses computer technology to address some of the practical problems of caregiving. The web-based format attracts employees who otherwise might not be able to attend PTC classes held in the community and allows for participation from remote locations at any time. PTC Online may also be attractive to employers because it can be delivered to a diverse and scattered workforce. PTC Online may be suitable for work-life programs, employee-assistance providers, and employers interested in improving the health and well-being of family caregivers in the workplace.

The initial development of PTC Online was fostered by a collaboration of ABC companies in partnership with Mather LifeWays. As a result of the initial success of PTC Online, the partnership continues as the ABC companies and others have contracted with Mather LifeWays to
offer the course to a substantial number of their employees. PTC Online
is seen as a work-life benefit that adds to a company’s benefits package. Potential effectiveness of PTC Online among other groups of family
caregivers such as elderly spouses deserves further study.

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