



The Effects of Yoga on Quality of Life and Psychological Distress Among Family Caregivers of Patients Suffering from Cancer

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KEYWORDS:

Yoga, caregivers, psychological distress, mental health, & yoga benefits.

ABSTRACT

The study aimed to evaluate the impact of a six-week yoga intervention on caregivers' quality of life and psychological distress. Results showed significant improvements in mental component scores and psychological distress. Participants also reported physical and mental benefits, including improved flexibility, strength, balance, breathing, and energy. This suggests that Primary caregivers may benefit both mentally and physically from Yoga.

INTRODUCTION

According to forecasts and data on cancer, the majority of people will eventually know someone in their immediate social network who has the disease (Segrin & Badger, 2010). Beyond the cancer patient, the immediate family, close friends, and spouses or partners also experience the acute and long-term repercussions of a cancer diagnosis (Kim & Given, 2008; Kitrungröter & Cohen, 2006; Northouse et al., 2007). More patients will need to rely on unofficial caregivers as the prevalence of cancer rises for support from diagnosis to survivorship (Edwards et al., 2002). At some point along the cancer continuum, cancer survivors are cared for at home, and more than half of the care needed by survivors is given by a family caregiver (Blum & Sherman, 2010).

The multifaceted needs of the survivor must be met by family caregivers, including treatment monitoring, symptom management, emotional, financial, and spiritual support, assistance with personal and instrumental care, transportation to and coordination of medical appointments, administering treatments, and assistance with activities of daily living (Cameron, Shin, Williams, and Stewart, 2004; Given, Given, and Kozachik, 2001; Kim & Schulz, 2008). Caregivers who lack appropriate resources or are not prepared for the demanding role may be negatively impacted by these duties (Baider, 2011). Caregiving for a cancer survivor takes a physical and psychological toll, and this toll frequently causes psychological distress that is greater

than or equal to the distress felt by the survivors (Braun, Mikulincer, Rydall, Walsh, & Rodin, 2007; Couper et al., 2006; Grunfeld et al., 2004; Hinnen et al., 2008; Hodges, Humphris, & Macfarlane, 2005; Kim, Kash Poorer mental health and quality of life (QOL) have been reported by caregivers whose psychosocial needs are not satisfied (Rivera, 2009).

According to Kim et al. (2010), caregivers of cancer patients represent a population deserving of study, research, and interventions that address their healthcare needs (such as psychological and emotional discomfort, concerns with personal care or health, and unmet activity demands). Interventions aiming at enhancing overall QOL and lowering psychological distress in caregivers are long overdue in light of the research indicating the detrimental consequences of caregiving. The wellbeing of caregivers, as well as their capacity to deliver the best care, lessen the strain on the healthcare system, and enhance the outcomes of cancer patients and survivors, depends on maintaining or improving QOL and lowering psychological distress (Van Puymbroeck, Payne, & Hsieh, 2007).

ENGAGING IN PHYSICAL ACTIVITY

Physical activity (PA) has been emphasized by researchers time and time again because it has been demonstrated to be beneficial for both physical and mental health (Warburton, Nicol, & Bredin, 2006). Reduced QOL, psychological distress, depression, physical deterioration (Schulz, Martire, & Klinger,



2005), and neglecting health-promoting behaviours are just a few of the negative effects of the burden and stress of providing care, according to Boyle et al. (2000), Vedhara, Shanks, Anderson, & Lightman (2000), and Pinquart & Sørensen (2003), Vitaliano, Zhang, & Scanlan (2003). The potential role of PA in meeting the complex healthcare requirements of this disadvantaged group has not been thoroughly studied. Although using PA interventions to increase caregivers' QOL and psychological discomfort has not been a primary focus of research, one study has suggested that PA might be the most effective way to do so (Ulger & Yagli, 2010). Additionally, according to other studies (Castro, Wilcox, O'Sullivan, Baumann, & King, 2002; Etkin, Prohaska, Connell, Edelman, & Hughes, 2008), caregivers may be less likely to engage in activities like regular PA as a result of their role as a caregiver. With yoga's rising popularity and numerous physical and mental health benefits (such as stress reduction, improved mood, balance, and strength), it is thought that this type of PA could be a helpful intervention for caregivers (Lim & Taylor, 2005; McCall, 2007). In the current study, the authors designed and implemented a six-week yoga program to examine its effects on psychological distress and overall QOL in a group of family caregivers for patients.

Methods

The pre and post-test period lasted six weeks for a single group in the pilot trial. Measures of psychological distress, QOL, and subjective program experience were included in the data from before and after the program. After receiving approval from the caregivers as well as their patients, participants were selected with the help of a cancer support group, and healthcare facilities. Participants, who ranged in age from 18 to 65, reported levels of distress severe enough to interfere with their daily lives (i.e., a score of 5 or higher on the 10-point National Comprehensive Cancer Centre distress thermometer), self-identified as primary caregivers or were identified as such by a cancer survivor at the beginning of the study. English language proficiency and a commitment to refrain from starting new or changing current PA habits for the duration of the trial were additional eligibility requirements. People with any health issues that would make it unsafe for them to participate in a PA program were also excluded, as were those who were older than 65, pregnant, or nursing a newborn.

A total of 12 sessions of the yoga intervention were held at Rose Garden, Ludhiana over a six-week period. Caregivers were encouraged to spend 150 minutes per week (two 75-minute sessions) participating in Yoga. Every yoga class contained between 25 and 40 poses that were drawn from the Yoga system and were instructed in accordance with its tenets. Each Yoga

session lasted 50–60 minutes and included 5–15 minutes of pranayama (breathing exercises) and meditation, as well as 4–10 minutes of savasana (a pose that promotes relaxation, calms the mind, and releases tension from the body) (Coulter, 2001; Fraser, 2006; Kaminoff, 2007).

Measures

Age, gender, education level, marital status, annual income, work status, number of months spent in the caretaker position, connection to cancer patient or survivor, and prior yoga experience were all self-reported demographic data that were gathered. The effectiveness of the study was evaluated by tracking overall program attendance. Additionally, the causes of absences were noted.

Psychological distress was assessed using the Profile of Mood States (POMS) (McNair, Lorr, & Droppelman, 1971; McNair & Heuchert, 2005). POMS is a 65-item scale with a Likert-type scoring system that ranges from 0 (not at all) to 4 (very). Total mood disturbance (TMD), a measure of overall psychological distress, is produced by the POMS by measuring mood disruption across six domains (i.e., tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment). According to McNair et al. (1971; McNair & Heuchert, 2005), a higher TMD score predicts more overall psychological discomfort while a lower score indicates less or less psychological distress. The POMS is a great tool for repeated measurements since it only considers state factors, meaning that earlier administrations have little bearing on later administrations. All POMS scales in the current investigation had good internal consistency reliability, ranging from 0.8 to 0.93.

Overall QOL was assessed using the SF-36®, version 2.0 (Osborne & Overbay, 2004). The physical component score (PCS) and the mental component score (MCS), each of which is composed of four subscales, are two health component summary measures that are produced by the multipurpose, 36-item SF-36 health survey. Physical functioning, role-physical, bodily pain, and general health are PCS subscales. Vitality, social functioning, role-emotional, and mental health are MCS subscales. According to research by Ware, Kosinski, and Dewey (2000), the two summary scores are reliable across clinical and general populations from different nations. In the current investigation, the PCS and MCS had high internal consistency reliability, with values ranging from 0.88 to 0.91. Ware et al. (2000) provided evidence for the concept, criterion, content, concurrent, and predictive validity of the SF-36 and established the reliability of the eight subscales using estimates of internal consistency and test-retest procedures.



At the end of the six-week intervention, a quick survey with 14 open-ended questions was given out. The purpose of the survey was to learn how carers felt about the significance of being in good physical and mental health. As part of the current study, the questionnaire also gathered details about the participants' motivations for participating, the makeup of their groups, and their general satisfaction with the yoga program. What was your primary purpose or incentive for attending yoga sessions? What would you like to see different to make this program a better experience? and other similar inquiries were included in the open-ended survey.

Statistical Analyses

SPSS, version 22.0, was used for all analyses.

Descriptive statistics and frequencies were used to assess and report on baseline demographic data, care recipient health profiles, and attendance. Using the Quick-Score Forms for POMS and SF-36, the psychological distress and QOL data were assessed. The data were checked for missing values, assumptions that had been broken, and outliers (outliers with a standard deviation [SD] larger than three) (Osborne & Overbay, 2004). The 14 subscales (i.e., six POMS subscales and eight QOL subscales) and the three summary measures (i.e., TMD, PCS, and MCS) all underwent inter-item reliability analyses. Analyses only accepted measurements having an internal reliability of 0.7 or above.

The study's exploratory design prevented multiple tests from being considered when calculating the p-value. As

a result, there was a higher chance of making a type 1 mistake and dismissing the null hypothesis when it might be true. All findings are reported with exact p values and eta-squared (η^2) effect sizes.

The effect of the Yoga intervention on overall psychological distress was investigated using a *t* test. The POMS TMD score was subjected to the initial *t*-test. Using extra paired samples *t*-tests on each of the 14 subscales from the two tests, posthoc analyses of the results were carried out. Separate *t*-tests were used on the summary measures (PCS and MCS) to examine how the Yoga intervention affected overall QOL.

The answers to the open-ended survey questions from the postintervention questionnaires were verbatim transcribed. To find the main topics, a content analysis was performed (Hsieh & Shannon, 2005).

Results

The yoga intervention attracted 14 caregivers who expressed an interest in taking part. All 14 participants gave their informed consent and completed the baseline eligibility requirements. All the participants completed the pre- and postintervention measures, however, two of them could only attend one yoga lesson and were therefore excluded from the final analyses. The remaining 12 individuals (Mean = 41, SD = 15), 11 of whom were female, ranged in age from 19 to 64, and had a mean baseline distress score of 6.5 (SD = 1.6) out of 10 (see Table 1).

Table 1. Participant Characteristics (N = 12)

Characteristic	n
Gender	
Female	11
Male	1
Marital status	
Married	4
Divorced or separated	4
Single or never married	3
Widowed	1
Education level	
Diploma after high school	3
Graduate degree	9
Annual income	
Less than 5,00,000	9
Declined to respond	3
Employment status	
Full-time	6
Part-time	1
Unable to work	1
Student	2
Retired	2
Months of caregiving	
1–6	5



7–12	1
13–18	1
19–24	1
25–32	4
Relationship to patient	
Daughter or son	7
Sister	2
Partner	1
Other	2

The average participant attended roughly 8 out of 12 lessons (SD = 2.1), with an overall attendance of 65% (94 of 144 total sessions attended). The most common excuses given for absences were having to work or go to school, being ill or in pain, having to provide care for others, being out of town or on vacation, having a prior obligation, and not having access to transportation. Two sessions were skipped, although the reasons for the absences weren't disclosed. One caregiver was away from the nation with a patient who was undergoing four yoga sessions of therapy.

From baseline (Mean = 60, SD = 32) to postintervention (Mean = 32.7, SD = 31.7; $t(11) = 4.11$, $p = 0.002$, 95% confidence interval [CI] [12.71, 41.96]), there was a significant difference and large effect ($n_2 = 0.61$) in TMD scores (see Table 2). From baseline (Mean = 55.8, SD = 8.2) to postintervention (Mean = 52.6, SD = 8.7; $t(11) = 1.62$, $p = 0.133$, 95% CI [-1.15, 7.58], $n_2 = 0.19$) there was no discernible difference in the PCS. The MCS showed a large effect ($n_2 = 0.41$) and a significant

difference ($t(11) = -2.76$, $p = 0.018$, 95% CI [-15.17, -1.71]) from baseline (Mean = 34.4, SD = 11.8) to postintervention (X = 42.9, SD = 13.6).

The want to unwind and de-stress ($n = 8$), the desire to learn yoga ($n = 7$), the need to engage in physical activity ($n = 5$), and the desire to interact socially with other caregivers ($n = 5$) were the most frequently cited justifications for taking part in the yoga study. The participants most frequently mentioned breathing exercises and the use of breath to relax when asked what physical or mental abilities they had learned during the six weeks ($n = 7$). Throughout the intervention, all the participants ($n = 12$) reported improvements in their mental or physical health, including gains in flexibility ($n = 5$), strength ($n = 4$), and physical fitness ($n = 2$).

Also noticed were perceived gains in energy ($n = 1$), awareness ($n = 2$), focus ($n = 2$), and relaxation ($n = 2$). Seven participants reported that the program changed how they felt on a daily basis.

Table 2. Effect of Yoga on QOL and Psychological Distress Measures

Baseline Measure	RangeAt Risk		α	Postintervention						
	Mean	SD		α	Mean	SD	p	n ₂		
Distress (TMD)	35–120	≥ 69	0.92	60	32	0.93	32.7	31.7	0.002	0.61*
Tension-anxiety	0–36	≥ 66	0.83	17.6	6	0.86	10.7	5.9	0.00	0.71*
Depression-dejection	0–60	≥ 23	0.9	0.9	18.6	11	0.91	11.8	8.8	0.024
Anger-hostility	0–48	≥ 20	0.92	12.4	9.5	0.91	9	7.4	0.077	0.26*
Vigor-activity	0–32	≤ 9	0.89	11.9	5.5	0.8	16.3	5	0.017	0.42*
Fatigue-inertia	0–28	≥ 18	0.87	11.7	5.9	0.83	8.8	4.5	0.18	0.16*
Confusion-bewilderment	0–28	≥ 13	0.84	11.7	6.2	0.9	8.8	5.7	0.00	0.73*
QOL (PCS)	–	–	0.88	55.8	8.2	0.86	52.6	8.7	0.133	0.19*
Physical-functioning	–	–	–	0.68	52.1	4.3	0.81	52.3	4.9	0.723
Role-physical	–	–	0.87	50.5	8.2	0.82	48.7	8.5	0.53	0.04
Bodily-pain	–	–	0.95	48.8	9.4	0.42	47.9	6.9	0.726	0.01
General-health	–	–	0.9	50	10.6	0.78	51.2	7.9	0.366	0.08**
QOL (MCS)	–	–	0.89	34.4	11.8	0.91	42.9	13.6	0.018	0.41*
Vitality	–	–	0.89	43.5	10.5	0.81	47.4	8.9	0.133	0.19*
Social-functioning	–	–	–	0.74	41.4	9.5	0.79	44.6	9	0.207
Role-emotional	–	–	0.85	35.5	14.7	0.9	43.6	13.7	0.018	0.41*
Mental-health	–	–	0.66	39.4	7.5	0.81	44.1	9.8	0.088	0.24*



* Represents a large effect (≥ 0.14), ** Represents a medium effect ($\geq 0.06-0.13$); MCS—mental component score; PCS—physical component score; QOL—quality of life; TMD—total mood disturbance.

Discussion

Throughout the intervention, all the participants ($n = 12$) reported improvements in their mental or physical health, including gains in flexibility ($n = 5$), strength ($n = 4$), and physical fitness ($n = 2$).

Also noticed were perceived gains in energy ($n = 1$), awareness ($n = 2$), focus ($n = 2$), and relaxation ($n = 2$). Seven participants reported that the program changed how they felt on a daily basis.

The study subjects may have been too physically active to see any significant improvements in their physical health in a short amount of time. The majority of participants ($n = 11$) perceived increases in physical fitness, as highlighted in the open-ended survey questions, despite the fact that there was no change based on subjective evaluations of the QOL measure. These results would imply that in larger research using Yoga therapies in carers, physical functioning characteristics need to be further investigated using objective measurements.

Although the small sample size made it difficult to detect statistical significance, 11 of the 14 psychological distress and QOL subscales had moderate or large effects on the hypothesized outcomes, as did two of the three summary measures (TMD and MCS). The findings of the current study are in line with those of previous studies that linked yoga interventions to improvements in quality of life (QOL) and decreases in psychological distress in both healthy and chronically ill populations (Oken et al., 2006; Pilkington, Kirkwood, Rampes, & Richardson, 2005; Sareen, Kumari, Gajebasia, & Gajebasia, 2007; Woolery, Myers, Sternlieb, & Zeltzer, 2004).

Usually, the person providing care for a cancer patient is their spouse or partner. However, the majority of participants ($n = 8$) in the present study were the patient's son or daughter. There is some data that suggests older partners or spouses may be more vulnerable to stress or burnout, most likely as a result of age-related physical decline (Pinquart & Sörensen, 2007). Researchers have discovered that carers, irrespective of their connections to the patient, are equally at risk (Segrin & Badger, 2010). To confirm the effectiveness and viability of a yoga intervention with caregivers, more study is required.

Limitations

The current study, to the authors' knowledge, is the first to document a significant decrease in overall psychological distress and an increase in overall quality of life (QOL) linked to mental health in caregivers of cancer patients using quantitative, valid, and reliable measures.

However, a few restrictions need to be taken into account. Lack of a control or comparison group was a significant constraint, making it difficult to identify whether improvements in total mental health-related QOL and decreases in overall psychological distress were caused by yoga or other confounding variables. Furthermore, the small sample size prevented the investigation of potential confounding variables using more potent statistics.

The results of the study should be evaluated with care because the p-value was not adjusted for multiple testing due to the exploratory character of the investigation.

The caregivers who volunteered for the program may now be more conscious of the value of PA and the necessity of taking care of their own well-being when under stress as a result of this study's evidential nature. The unusually small number of males ($n = 1$) may have been caused by the intervention's use of yoga. Although the exercise was the most popular intervention and stress-reduction approach for both men and women, according to Swartz and Keir's 2007 research, just 30% of men (as opposed to 48% of women) favoured yoga as a stress-reduction or intervention option.

Future Research

The results of the current investigation should be regarded as preliminary and handled with caution due to methodological constraints. The results of this study offer valuable information about yoga as a potential supplemental therapy to control or lessen psychological distress and enhance carers' quality of life, although further research is needed in this area. There is a need to test the findings of the current investigation using bigger sample sizes and more rigorous study designs, such as randomized controlled trials, multiple testing controls, and confounding factor control. Same-sex yoga classes that test the viability and acceptability of yoga by both genders could be included in further studies. If interventions lead to different improvements for female caregivers compared to male caregivers, the evidence is lacking from studies. Research is also required to comprehend how the perceived burden of caregiving, the caregiver's relationship to the patient, and the length of caregiving affect psychological distress and QOL results when PA therapies are used. Assessing caregivers before, during, and after the intervention may be the best way to better understand predictor variables such as financial strain, work disruptions, caring obligations, disease progression, and grief or death. There were no objective tests of physical functioning in the current investigation. It would be easier to determine whether improvements in physical functioning are associated with decreases in psychological distress, an



improvement in quality of life, and whether yoga is equivalent to other types of PA and yoga styles in terms of enhancing objective physical functioning. There is no evidence to support a particular yoga program's ideal volume, frequency, duration, style, or length for enhancing health. Yoga intervention studies have ranged in duration from four weeks to six months (Lim & Taylor, 2005; Michalsen et al., 2005; Moadel et al., 2007; Oken et al., 2006; Speed-Andrews, Stevinson, Belanger, Mirus, & Courneya, 2010; Swartz & Keir, 2007; Woolery et al., 2004), with 60–90-minute sessions once or twice a week, with or without home-based sessions. Additional studies evaluating the effect of yoga session length, treatments, and particular yoga styles are needed. Although the group of caregivers in the current study seemed to find the Yoga intervention to be an acceptable and fun kind of PA intervention, this sort of intervention may not be suitable for all caregivers. A more meditative-based yoga program may be advantageous for this population in light of the general satisfaction with the breathing and meditation techniques taught throughout the Yoga sessions. If used in conjunction with or as a supplement to other interventions already provided (such as therapy), a Yoga intervention may be advantageous for some carers; nevertheless, it should not be utilized in place of current psychosocial interventions.

Although there are several advantages to providing in-person interventions to caregivers (such as learning proper technique, ensuring proper use of props, motivation, and socializing), the authors of the current study had trouble with recruitment, adherence, and retention (Jacobs et al., 2004; Mant, Carter, Wade, & Winner, 2000; Waldron, Janke, Bechtel, Ramirez, & Cohen, 2013). With little face-to-face interaction, the development of supervised home-based PA programs has showed promise in promoting long-term exercise adherence (King & Brassington, 1997; Waelde, Thompson, & Gallagher-Thompson, 2004).

A theoretical framework can serve as a platform for developing interventions that are supported by evidence. There are many different theoretical frameworks, but research on behaviors that promote health has given a lot of attention to the theory of planned behavior (TPB) (Ajzen, 1991).

Notably, TPB has guided the majority of the theoretical research on PA, and a number of reviews have shown TPB's concepts to be valuable predictors for explaining exercise behavior in healthy and chronically ill populations (Blanchard, Courneya, Rodgers, & Murnaghan, 2002; Courneya & Friedenreich, 1999; Courneya, Friedenreich, Arthur, & Bobick, 1999; Downs & Hausenblas, 2005; Keats, Culos-Reed, Courneya, & McBride, 2007).

Theory-based research can help customize interventions to caregivers' needs by identifying which caregivers are likely to adopt or sustain a particular habit.

CONCLUSION

Studies involving those who care for cancer patients have concentrated on caregiving abilities and treating symptoms through therapeutic counselling and education. Few researchers have looked at how yoga or PA can reduce a caregiver's overall QOL and psychological suffering. For future research as well as for medical professionals dealing with cancer patients and their caregivers, the preliminary results from this pilot project are crucial. By encouraging caregivers to participate in Yoga, nurses can aid in their continued physical and mental well-being.

Because nurses regularly interact with family caregivers, they provide a vital point of contact, motivation, and assistance to help family caregivers take care of themselves to maintain their physical and mental health. The current study offers early evidence that highlights the potential advantages of engaging in yoga and shows that nurses' support of such activities may enhance family caregivers' psychological well-being and QOL generally.

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