

Dependent care, caregiver burden, hardiness, and self-care agency of caregivers

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This is a partial replication of a descriptive correlation study that examined the relationship between dependent care, caregiver burden, health-related hardiness, and self-care agency of caregivers. Data from this replication were compared with those of the previously reported study. Data were collected from a home health agency and a radiation-oncology unit. A moderate significant negative correlation was found between objective burden and dependent care. Moderate significant positive correlations were found between self-care agency scores and the commitment/challenge and control subscales of health-related hardiness scores. The major difference between this study and the previous one was in the level of subjective burden. Even though caregivers reported greater levels of subjective burden, the correlation with self-care agency

and hardiness was nonexistent. The small subsample of male caregivers ($n = 14$) prevented a statistical comparison with the previous data; however, in the pooled sample previous findings were supported.

Key Words: Self-care agency—Orem's theory—Caregiver burden—Health-related hardiness—Dependent care.

This study is an extension of one previously reported (1) that found gender differences in the caregiving experience among family members of cancer patients. The purpose of the present study is to clarify some of the relationships found in the earlier investigation by including health-related hardiness as a possible mediating factor between a caregiver's self-care agency and the negative impact of the caregiving experience. Caregivers have reported somatic complaints, decreased interaction with other family members, work interruptions, and exhaustion (2), and women, as caregivers, in particular were susceptible to a decrease in their self-care agency (1). Caregivers have expressed a need both for assistance with the work of caregiving but also household tasks associated with providing that care (3). The specific concepts reexamined in the present study include dependent

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care, caregiver burden, and self-care agency. Self-care agency is understood as a person's ability to engage in self care. Dependent care is defined as the "production of actions directed to self or the environment in order to regulate one's functioning in the interests of one's life, integrated functioning, and well-being . . ." (4) but "is performed by responsible adults for socially dependent individuals" (5). Caregiver burden has been defined (6) as a two-dimensional phenomenon embracing, on the one hand, the extent of disruptions or changes in various aspects of the caregiver's life and household (objective burden) and, on the other hand, the caregiver's attitudes toward, or emotional reaction to, the caregiving experience (subjective burden).

Hardiness was added as a result of literature (7), which invites the speculation that hardiness contributes to differences in the caregiving experience. Hardiness is conceptualized (8) as a multidimensional attribute comprising challenge, commitment, and control: an individual is hardy in the relevant sense to the degree that he or she (a) evaluates a stressor as a challenge, (b) is committed to living with the required changes, and (c) perceives that he or she has control over those changes. Caregivers with high levels of hardiness may be able to tolerate the stresses and strains of the caregiving experience better than individuals with low levels of hardiness.

It is reported in the original study (1) that although a Pearson's correlation performed on the total data set showed no relationship between dependent-care and self-care agency, gender had a significant suppressive effect when the data were subdivided into gender subgroups. Surprisingly, as between self-care agency and dependent care, the relationship was positive within the husband subgroup and significantly negative within the wife subgroup. Several other relationships between objective burden and dependent care were also in opposite directions for the two subsamples, the wives perceiving less strongly than the husbands that caregiving is disruptive to the household routine; subjective burden interferes with the wife's ability to provide her own self care but has little association with the husband's self-care agency.

Although the reports in the literature do not explicitly discuss hardiness in relation to the caregiving experience, they imply that such a relationship exists (7,9-11). Holt et al. (12) found in their study of 134 teachers that those characteristics indicating lower levels of hardiness had a significantly higher incidence of physical illness. Hull et al. (13), in their sample of college students, found the control and challenge

subscales and, to a lesser degree, the commitment subscale associated with personal distress. On the basis of their literature review and their findings, Hull et al. also predicted that the commitment subscale would be more important than the other two in relation to health outcomes. In a prospective study, Wiebe and McCallum (14) found that hardiness correlated significantly with both severity of illness and number of reported symptoms. In addition, they proposed that stress produces a change in health practices so that individuals under stress may become ill because they do not attend to health maintenance. Certainly providing care to a family member with cancer can be considered a difficult experience, one that becomes more physically and emotionally stressful as the disease progresses. If caregivers with higher levels of hardiness can maintain adequate self care and dependent care while perceiving less burden, it will be beneficial for nurses to develop interventions to increase a person's level of hardiness.

CONCEPTUAL FRAMEWORK

Orem's (4) nursing theory was used as the theoretical basis for studying the caregiving experience. This study specifically adds the dimension of health-related hardiness as a possible intervening variable between dependent care, caregiver burden, and the caregiver's self-care agency. Orem characterizes self-care agency as comprising three elements: (a) certain operations specific to the phases of deliberate action, (b) the 10 power components, and (c) designated capabilities and dispositions for engaging in self care that are postulated as foundational within Orem's theory. The following capabilities that empower a person to engage in self care operations are what Orem calls "power components": (a) the ability to maintain attention and exercise vigilance with respect to oneself and to internal and external conditions; (b) the ability to use and control physical energy; (c) ability to control bodily movements; (d) the ability to reason; (e) motivation; (f) the ability to make decisions; (g) the ability to acquire technical knowledge; (h) a suite of cognitive, perceptual, manipulative, communication, and interpersonal skills; (i) the ability to order discrete actions; and (j) the ability to integrate actions into daily living.

Orem uses the phrase "basic conditioning factors" for conditions or events that affect the development, operability, or adequacy of one's capabilities to care for oneself or a dependent. It therefore follows by definition that the development or operability of

self-care agency is affected (either positively or negatively) by basic conditioning factors. The conceptualization of dependent care as a basic conditioning factor takes into account the interplay between dependent care and self-care agency within the family system.

Orem identifies several capacities essential for the deliberate performance of any action and, hence, for the performance of self care. She organizes these capacities into various "foundation" categories, among which are (a) a category comprising selected cognitive capacities such as sensation and perception; (b) a category comprising such capabilities as the abilities to reason, to make judgments, and to communicate; (c) a category comprising such introspective capacities as the abilities to self examine and to recognize that one is in need of self care; and (d) a category comprising orientational capabilities and dispositions essential for goal direction, such as a willingness to engage in self-care or to be concerned about health (4). Review of the related literature shows that, in addition to dependent care actually provided to an ill family member, the perception of subjective and objective burden associated with that care can be expected to have an effect on the caregiver (6). Both caregiver burden and health-related hardiness are conceptualized as belonging to category (d) above: they are treated as significant orientational capabilities or dispositions that may affect the operability or development of the power components of self-care agency.

This study examines the relationships between the basic conditioning factor of dependent care, the foundational capabilities and dispositions of caregiver burden and health-related hardiness, and the self-care agency of family members of cancer patients. Based on Orem's theory and previous research the following hypotheses were developed:

1. There will be a positive significant relationship between health-related hardiness and self-care agency of caregivers of cancer patients.
2. There will be a significant inverse relationship between health-related hardiness and caregiver burden of caregivers of cancer patients.
3. Health-related hardiness will be an intervening variable between caregiver burden and self-care agency and between dependent care and self-care agency of caregivers of cancer patients.

METHODS

Instrumentation

The Denyes Self-Care Agency Instrument (DSCAI) was used to measure the power components

of self-care agency. The DSCAI is a 34-item self-report measure that produces ratio level data. Denyes (15) developed the DSCAI to measure self-care agency in adolescents; however, it has been used successfully with adult samples. Cronbach's α for the DSCAI scores was >0.80 in two adult samples (16,17). Cronbach's α for this current data set was 0.87 but may not be accurate because of the small sample size. Construct validity is supported by the instrument's theoretical consistency (16-18) and by evidence reported by Denyes (15). The original factor analysis on the DSCAI identified the following subscales: (a) ego strength, (b) valuing of health, (c) health knowledge and decision-making capability, (d) physical energy, (e) feelings, and (f) attention to health. Subjects respond on a numeric rating scale ranging from 0 to 100, with 100 representing a maximum level of self-care agency. A sample item from the DSCAI is as follows: "On a scale of 0 to 100, how much do you know about stress as it relates to your health." Means are calculated both for the total score and for the respective subscale scores.

The Task Scale (6) is used to operationalize dependent-care. The Task Scale is a 27-item instrument that includes assistance in the areas of body, meal, financial, and transportation activities. Subjects respond by entering the number of hours they spend weekly assisting a family member in each of the four areas. Body subscale items ask about tasks related to personal care; the meals subscale items include assistance with eating and food preparation; the moving subscale asks about transportation needs; and the money subscale addresses assistance with financial matters. Subscale totals and a summation of the total number of hours can be calculated. Montgomery et al. (6) reported internal consistency for the subscales as ranging from 0.60 to 0.90 (6), whereas in another study α coefficients ranged from 0.43 to 0.77 (17). Although Cronbach's α was calculated on the current data set (0.56-0.75), the results must be questioned because of the sample size. A sample item from the Task Scale is as follows: "Help getting to toilet, bedpan, or to maintain toilet functions." Subjects were asked to use the preceding 2 weeks of dependent care as a reference point when reporting the approximate amount of time they spent assisting their spouses in each of the four areas during a week (6).

The Burden Scale (6) is used to measure objective and subjective burden. Objective burden is the disruption or change in various aspects of the caregiver's life and household: it includes items reflecting concrete events and activities of caregiving. Subjective burden

is the caregiver's attitudes toward, or emotional reactions to, the caregiving experience. It includes items that focus on the feelings, attitudes, and emotions expressed about caregiving. The combined objective and subjective burden subscales have 14 items measured on a 5-point Likert scale, with higher scores indicating higher levels of burden. Only subscale mean scores are calculated. Internal consistency is reported by Montgomery et al. (6) as 0.94 for the objective burden subscale and 0.80 for the subjective burden subscale, with an intercorrelation of 0.31. Schott-Baer (17) reported 0.69 for the subjective burden subscale and 0.79 for the objective burden subscale, and for the current data set 0.81 and 0.90, respectively. Factor analysis was used to identify the two scales (6). Montgomery et al. (6) reported that objective burden correlates with characteristics of the caregiving behavior and the presence of other family members to assist with care; they likewise report that subjective burden correlates with personal characteristics of the caregiver.

The Health-Related Hardiness Scale (HRHS) (8) is used to measure hardiness. The HRHS is a 35-item self-report measure with a 6-point Likert-type scale. There are 20 items on the commitment/challenge subscale and 14 on the control subscale. The control subscale measures mastery of, or self-confidence to appraise and interpret, health stressors. The commitment component measures motivation and competence at coping with a health stressor, and the challenge component takes into account a person's ability to redefine a health stressor as an opportunity for growth. Cronbach's α is reported as 0.91 for the total scale and as 0.87 for each of the subscales. Test-retest reliability at 6 months was 0.76 for the total scale and 0.78 and 0.74 for the control and commitment/challenge subscales, respectively. In the current data set for the control subscale, reliability was 0.70 and for the commitment/challenge subscale reliability was 0.86. Higher scores correspond with higher levels of hardiness. Some items are reverse-coded, and then both subscale and total scores are calculated.

Sample

The convenience sample was composed of 39 women and 14 men. The mean age for the subjects was 59.2 years (SD 12.9), who had an average of 12.9 years of education. Ninety-eight percent of the sample was white. Spouses represent the largest category of caregivers (67.3%), with adult children representing 26.9%, and siblings and parents accounting for an additional 3.8% and 1.9%, respectively. The high level

of education in this sample was reflected in the occupations of the subjects. Forty-one percent were classified as skilled and 37% as professional; 21.7% reported their occupation as housewife. On average, the subjects had been caregivers for 87.1 weeks (SD 140.6). As the standard deviation indicates, there was a wide dispersion for weeks as a caregiver, ranging from a high of 724 weeks (13.9 years) to a low of 4 weeks. The majority (53.5%) of the subjects had incomes ranging from \$10,000 to \$40,000 a year. The majority of the subjects stated that they also have a health problem (57.7%), with skeletal, endocrine, and circulatory conditions representing the most commonly reported health deviations. Table 1 summarizes the descriptive statistics of the sample.

Procedures

Inclusion criteria required that subjects be (a) at least 18 years of age, (b) living in the home with the ill family member, (c) able to read and write English, and (d) entrusted with primary care of the ill family member. Data collection took place in the same radiation-oncology department as in the previous study but with the addition of home health caregivers. A research assistant determined if subjects met the inclusion criteria. After the study was explained and

TABLE 1. Descriptive statistics of the sample
(*N* = 54)

Variable	Mean (n)	SD	% of total (n)
Age (total)	59.2 (54)	12.9	
Men	66.5 (14)	11.8	
Women	56.4 (39)	12.4	
Years of education	12.9 (54)	2.8	
No. of weeks as caregiver	87.1 (54)	140.6	
Gender			
Men			26.4 (14)
Women			73.6 (39)
Relationship			
Spouse			67.3 (35)
Adult child			26.9 (14)
Sibling			3.8 (2)
Parent			1.9 (1)
Occupation			
Skilled			41.3 (19)
Professional			37.0 (17)
Housewife			21.7 (10)
Income (%)			
<10,000			16.3 (7)
10,001–20,000			23.3 (10)
20,001–40,000			30.2 (13)
40,001–60,000			20.9 (9)
60,001–80,000			9.3 (4)
Caregiver health problem			
Yes			57.7 (30)
No			42.3 (22)

TABLE 2. Pearson correlations between DSCAI total and subscale scores and HRHS subscales (*N* = 54)

Variable	Commitment/challenge	Control
DSCAI total	0.57 ^a	0.46 ^a
Health knowledge	0.44 ^a	0.50 ^a
Feelings	0.44 ^a	0.30 ^a
Ego strength	0.52 ^a	0.41 ^a
Energy	0.48 ^a	0.29 ^a
Attention health	NS	NS
Value health	NS	NS

^a Significant <0.05.

a consent form signed, the subjects were given the questionnaires. Completed questionnaires were returned to the research assistant. The study was approved by the human subjects committees at the university and the participating hospital.

RESULTS

It must be acknowledged that the number of male caregivers in this sample is comparatively small. Every attempt to increase the subsample of male caregivers was unsuccessful: male caregivers just were not readily available in our population. This continues to leave open questions about gender differences in the caregiving experience.

Hypothesis 1 predicted a significant positive correlation between HRHS and DSCAI scores. Table 2 presents the results of the Pearson's correlations examining the relationships between the total and subscale scores for the HRHS and the DSCAI. The premise that the challenge/commitment and control subscales of the HRHS are significantly correlated with the total DSCAI score is supported by a Pearson's correlation of 0.57 and 0.46, respectively. In addition, four of the DSCAI subscales are also significantly

correlated with the HRHS subscales. A caregiver who feels motivated to cope with a health threat and views the associated changes as a growth experience has significantly higher levels of self-care agency, specifically, knowledge about their health and feelings about self-care, ego strength, and physical energy. Likewise, a sense of control is associated with significantly higher levels of self-care agency and the same four subscales.

The inverse correlations predicted in hypotheses 2 between HRHS and caregiver burden (objective and subjective) are not supported in this data set. Because the lack of support may be due to sampling problems, it is prudent to consider these findings inconclusive and to explore further possible connections between these important concepts. It would be premature to conclude that these variables lack clinical utility. It should be noted that the relationship between objective burden and dependent-care (Task Scale scores) was significant ($r = -0.48$, $p = 0.01$). Caregivers' perceptions of inconvenience and household disruptions decrease as the work associated with caregiving increases. This finding is contrary to what would be expected given the conceptual definition of objective burden.

In order to examine the relationship between dependent-care and subjective and objective burden and DSCAI scores, using the hardiness subconcepts as mediating variables (hypothesis 3), partial correlations are required. Regarding dependent-care (Task Scale scores) and DSCAI scores and subjective and objective burden and DSCAI scores, there were no differences between the zero-order Pearson's correlation values and the first-order partial correlation values. Therefore, the predicted relationships are not supported.

The descriptive statistics for male and female subsamples from this data set and the previous one

TABLE 3. Comparison of the two data sets on descriptive statistics of major variables by gender

Variable	Current data set		Previous data set ^a	
	Men (<i>n</i> = 14)	Women (<i>n</i> = 39)	Men (<i>n</i> = 49)	Women (<i>n</i> = 69)
DSCAI	72.3 ± 10.4	70.2 ± 13.0	70.5 ± 11.6	69.8 ± 13.7
Task scale	43.6 ± 18.7	42.9 ± 26.8	37.9 ± 22.5	37.2 ± 25.1
Subjective burden	25.8 ± 4.5	27.2 ± 6.5	13.3 ± 1.8	13.0 ± 3.3
Objective burden	12.9 ± 2.8	12.2 ± 6.5	12.8 ± 3.6	12.4 ± 4.1
Challenge/commitment	5.0 ± 0.69	5.0 ± 0.60	NA	NA
Control	4.6 ± 0.78	4.7 ± 0.60	NA	NA

^a Data from Schott-Baer (1).

(1) were compared on DSCAI, Task Scale, and subjective and objective burden scores (Table 3). Although statistical testing is not possible because of the subgroup sizes, it is apparent from Table 3 that the DSCAI, Task Scale, and objective burden scores probably would not differ significantly between the two data sets. However, the subjective burden scores are substantially different between the caregivers in the previous study and the present sample. Length of time in the caregiving role is the only demographic variable distinguishing the two groups that might account for this difference between the samples. The mean length of time as a caregiver was reported as 27.4 weeks for the previous sample (1) and 87.1 weeks for the present sample (Table 1).

DISCUSSION

It is reassuring to discover the potential importance of the challenge/commitment and control dimensions of hardiness and self-care agency. As subjects' level of health-related hardiness increases, their self-care agency also increases. Four of the DSCAI subscales have significant moderate correlations with the challenge/commitment and control subscales ranging from $r = 0.29$ to $r = 0.52$ (Table 2). These findings lend support to the suggestion of Hull et al. (13) that the commitment/challenge subscale is more strongly associated with health outcomes than is the control subscale; they also support the findings of Holt et al. (12) that show a significant increase in physical illness with low levels of hardiness. Carey et al. (19) reported a positive significant correlation between hardiness and health state among their caregivers. Pollock et al. (11) found that hardy individuals participated in more health-related activities. In the present study, a caregiver committed to his or her life situation and challenged by the necessary readjustments has enhanced energy, greater ego strength, and more positive feelings about his or her own self-care. The hardy subjects of Kobasa et al. (10) were actively involved with their environment, using inner resources to take ownership of the situation. A hardy caregiver might therefore view the illness of a family member as an opportunity to increase his or her own self-care. Interventions aimed at increasing a caregiver's perception of commitment to, and mastery over, his or her environment (e.g., allowing the caregiver to coordinate the timing of dependent-care procedures such as radiation treatments) can be expected to empower his or her self-care agency. Likewise, a caregiver with lower levels of hardiness can be ex-

pected to have lower levels of self-care agency. As a result of a reduced capability to achieve self-care, these less hardy individuals should be more susceptible to stress-related illness with a potential secondary reduction in the quality of dependent-care.

The proposed negative relationship between caregiver burden (subjective and objective) and health-related hardiness is not supported by the present findings. Conceptually, it is reasonable to expect that the inconveniences and disruptions in one's life and associated resentment will be offset by a strong sense of commitment to and control over the caregiving environment. Certainly, the sample size in the present study may have prevented discovery of such a relationship, or perhaps the particular subjects involved simply did not perceive their caregiving to be burdensome. The prior study indicates that subjective burden in particular has a significant influence on self-care agency, yet the mean score for subjective burden is actually higher in the present sample. Thus, in explaining the absence of a significant relationship between subjective burden and self-care agency in the present results, it is more plausible to identify sample size as the problem rather than the conceptualization.

Hull et al. (13) found no evidence for a mediating or buffering effect of hardiness. Rather, they concluded that a lack of commitment and/or control is psychologically stressful in and of itself. This might explain the absence of any change in the zero-order correlation between dependent care and self-care agency, and subjective and objective burden and self-care agency.

The difference in level of subjective burden between this and the earlier study (Table 3) might be related to the inclusion of home health caregivers (52%) in the current sample. Although this apparent increase in burden over time is similar to that found in the prior study (1), it is not consonant with findings reported elsewhere in the literature. Zarit et al. (20) also used a sample of in-home caregivers, but their reported burden decreased at the 2-year follow-up interview. The sample of Vitaliano et al. (21) also showed a decrease in subjective burden over time. Baumgarten et al. (22) reported that the depression scores of their subjects decreased after 36 months in the caregiver role. Caregivers in this study did report that some of the cancer patients had comorbid conditions, such as strokes, that would make caring for a cancer patient more complex. Further information is needed before any conclusions can be drawn about these complex relationships.

Although these findings are inconclusive, they provide direction for further exploration of the care-

giver experience. Of particular interest are the relationships between hardiness and self-care agency and hardiness and subjective burden, although the latter is not significant in the present study. It is premature to develop intervention studies focusing on these relationships, but continued exploration of a descriptive nature will be helpful. Certainly this study shows the difficulties, i.e. recruitment, inherent in investigating caregivers as a group and male caregivers in particular. Continued efforts should be made to identify populations in which male caregivers are more readily available to researchers. □

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