Risk, Resilience, and the Two-Track Model of Dementia Grief Among Spouses of People Living With Cognitive Decline

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Abstract

Pre-death grief in the context of dementia caregiving is a significant risk factor for depression, burden, anxiety, and adjustment difficulties. The Two-Track Model of Dementia Grief (TTM-DG) provides a bifocal perspective addressing the nature of the emotional attachment to a loved one living with cognitive impairment, along with a medico-psychiatric perspective associated with stress, trauma, and change in life. The aims of the present study were to empirically validate the components of the model as to identify salutary and risk factors for maladaptive grief responses. Participants were 62 spouses of people living with cognitive impairment, and a control group of 32 spouses. All completed a battery of self-report questionnaires. Structural Equation Modeling yielded six variables consistent with the TTM-DG: partner's behavioral disorders; caregiver's burden; social support; physical health; attachment anxiety; and dementia grief as an outcome measure. Additional findings addressed participants at risk for grief difficulties. The findings provide empirical support for the utility of the TTM-DG in the identification of risk factors associated with maladaptive responses and pre-death grief following a spousal cognitive decline. The TTM-DG can assist in the formulation of evidence-based evaluations and interventions to assist spouses caring for their loved ones living with dementia.

Keywords

dementia, caregivers, loss, grief, bereavement, two-track model

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Introduction

The dementias exact a heavy toll on those afflicted, their families and caregivers, and on society as well. These syndromes have diverse origins but they are progressive and characterized by both cognitive and functional impairments. Over time, these impairments are accompanied by negative changes in personality and behavior. The diagnosis of dementia (major neurocognitive disorder) requires that two main criteria be met: (a) significant decline from previous levels of performance in at least one cognitive domain; and (b) the cognitive deficits present interfere with independent functioning in everyday activities (American Psychiatric Association [APA], 2022).

Alzheimer's disease constitutes more than 50% of the diagnosed dementias and is the sixth leading cause of death in the U.S. (Alzheimer's Association, 2019). It is estimated that the number of people living with dementia would increase from 57.4 million cases globally in 2019 to 152.8 in 2050 (Nichols et al., 2022). This "*silent pandemic*" (Yehene et al., 2021) will greatly add to the strain on the healthcare systems including the provision of palliative medicine worldwide (Connor & Rubin, 2022). The expansion in numbers will greatly impact the informal patient support networks comprised

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mainly of spouses and adult children, who provide much of the daily care required (Wimo et al., 2013).

Providing care for a family member living with Alzheimer's Disease and Alzheimer's Disease Related Dementias (AD/ADRD) increases the risk for carer emotional and functional difficulties (Tzuang & Gallagher-Thompson, 2014). For example, Mausbach et al. (2013) found that while 40% of spouses of individuals living with AD/ADRD met the criteria for clinical depression, only five percent of the older spouses of people without AD/ADRD met the depression criteria. These figures underscore the degree of difficulty experienced by spouses and family members of the ill.

While there is substantial theoretical and research attention focused on the stress and burden experienced by caregivers, the same cannot be said for theory and research focusing on the *grief* and *bereavement* responses of these family members. Pre-death grief (PDG) in the context of AD/ADRD family caregiving is the caregiver's emotional and physical response to the perceived losses in a valued care recipient. Family caregivers experience a variety of emotions (e.g., sorrow, anger, yearning, and acceptance) that can wax and wane over the course of a dementing disease, from diagnosis to the end of life (Lindauer & Harvath, 2014).

This experience encompasses two separate constructs, anticipatory grief (AG) and illness-related grief (IRG). AG is the mourning response to the impending death prior to the death event itself. IRG is rooted in the present over the current ongoing losses experienced during the course of the illness (Singer et al., 2022). PDG is triggered by a number of processes including, (a) caring for the ill person where the disappearance of the personality and personhood precedes the actual physical death; (b) a drawn-out and uncertain course of the disease; (c) communication difficulties between the affected patient and the caregivers; and (d) deterioration in relationship quality, unfamiliar and stressful family roles and signification limitations in caregiver freedom (Lindauer & Harvath, 2014).

PDG in the context of AD/ADRD caregiving was found to be a significant risk factor for depression, anxiety, and difficulties in coping and adjustment that may rise the need for professional assistance and intervention (Chan et al., 2013). The most robust predictors for negative outcomes for family caregivers are advanced stages of AD/ADRD (Cheung et al., 2018), lack of social support (Moore et al., 2020), low level of education, and being a spouse of the person living with AD/ADRD (Liew et al., 2019), poor physical health of the caregiver (Cucciare et al., 2009), neuropsychiatric disorders of the person living with AD/ADRD (Park et al., 2019), and burden (Meichsner et al., 2020). The numerous risk factors highlight the various difficulties experienced by family caregivers.

Moreover, studies have documented high levels of post-death difficulties as well. Complications of grief for approximately 6% to 26% of bereaved family caregivers of AD/ADRD patients have been reported (Crawley et al., 2022). More recent developments in the classification of maladaptive grief suggest that both the ICD's (World Health Organization, 2021) and the DSM-5TR's (APA, 2022) Prolonged Grief Disorder categories, will be among the sequelae to bereavement following AD/ADRD death. The findings that elevated levels of PDG predict higher levels of grief post-death grief and mourning underscore the importance of measuring grief levels during the illness.

The growth of empirical research focused on pre-death grief in dementia caregiving has been accompanied by advances in theory. In recent years, several models have been proposed with the aim of providing a theoretical framework that will assist in conceptualizing the grief and loss that accompanies this unique experience (i.e., Blandin & Pepin, 2017; Meuser & Marwit, 2001; Noyes et al., 2010; Rubin et al., 2021). In the Two-Track Model of Dementia Grief (TTM-DG; Rubin et al., 2021), the theory and research draw from the paradigm of the Two-Track Model of Bereavement (Rubin, 1981, 1999; Rubin et al., 2012) that has served to inform evidence-based research and clinical practice for more than four decades (e.g., Klass et al., 1996; Klass & Steffen, 2018; Kosminsky & Jordan, 2016; Neimeyer & Holland, 2015).

The TTM-DG is based on the distinction between the two tracks of the original Two-Track Model of Bereavement and is an extension of it that takes into account the unique features involved in caregiving for an individual living with AD/ADRD. Furthermore, the model addresses some of the limitations found in alternative models while also incorporating recent advances in the research literature (Rubin et al., 2021). This model includes four categories that specify and describe the main domains involved in coping with a family member living with AD/ADRD and their implications for the family members. These are: characteristics of the affected family member living with AD/ADRD; the objective circumstances of caregiving; characteristics and resources of the caregiver; and a two-track assessment of responses of the caregiver. Figure 1 presents the domains of the model in some detail.[1]

The objectives of the present study were to focus on the impact of caregiving for a spouse living with AD/ADRD. Furthering the understanding of the spousal experience allows for greater precision in identifying salutary and risk factors that affect the ways in which family members adapt to their loved one's deterioration due to dementia. This process contributes to the evolution of appropriate evidence-based evaluation and intervention approaches to assisting family members caring for loved ones living with AD/ADRD. Following the methods section, the analysis of the findings and their implications in the discussion will be done in two stages. These are: (1) Create a path model to map the relationships between the various research variables, based on the factors of the TTM-DG (Rubin et al., 2021); (2) Identifying and differentiating between variables that characterize the profile of a resilience group among spouses of people living with cognitive impairment
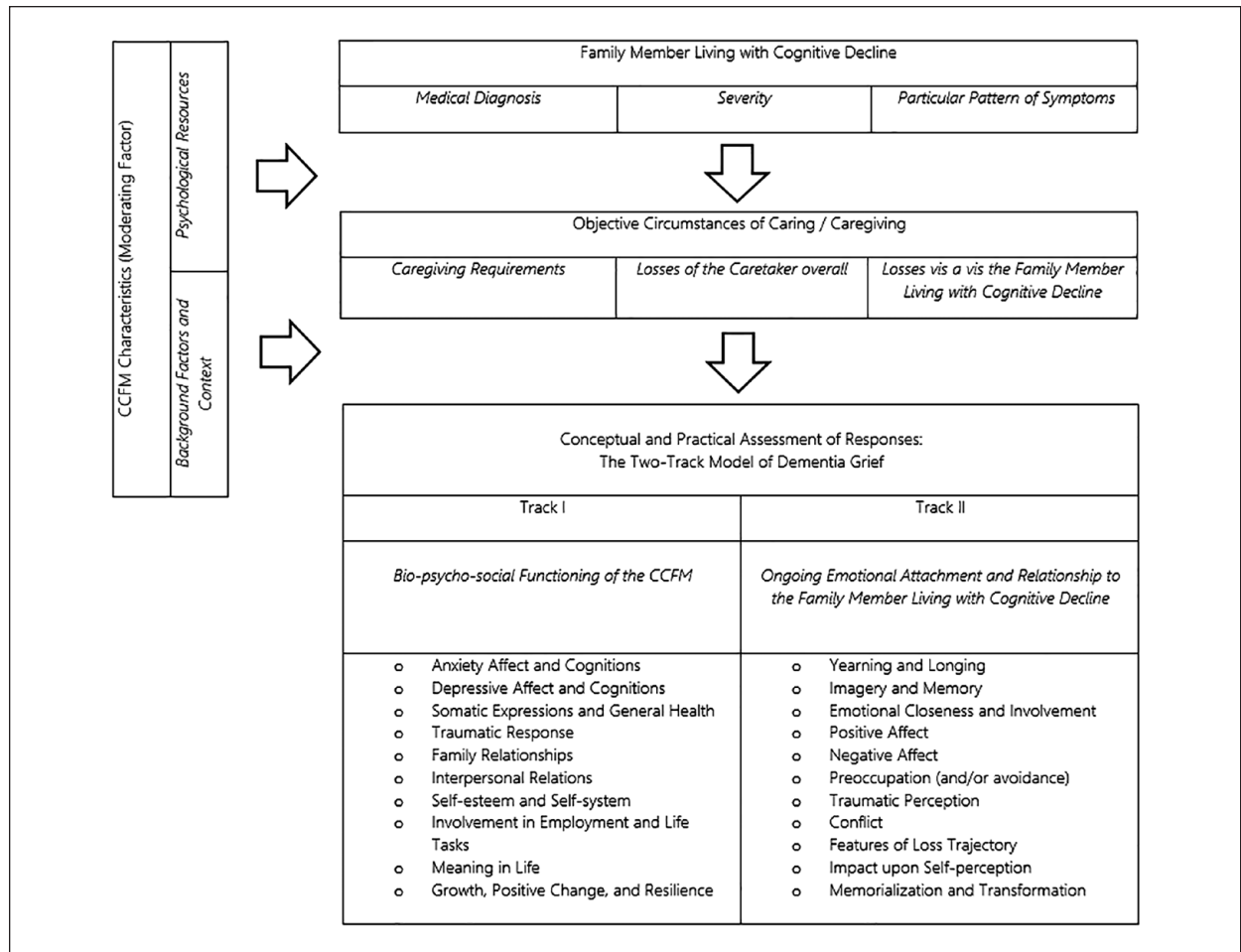
Figure 1. The Two-Track Model of Dementia Grief (reprinted with permission from Rubin et al., 2021).
Note. CCFM = caring and caregiving family member.

compared to those defined as a risk group for maladaptive grief responses.

Method

Design and Participants

The present study focused on healthy *spouses of people with AD/ADRD* (SADRD). A total of 94 independent older adults living in the community participated voluntarily and without monetary compensation. The study included two groups: (1) spouses of people currently living with various degrees of cognitive impairment[2] (n = 62); and (2) a control group of participants whose spouses are without cognitive or functional impairment, and are compatible in their demographic characteristics with the dementia group (n = 32). The distribution of the demographic and background variables for the two study groups appear in Table 1.

Measures

The specific assessment instruments described below were chosen based on the scientific literature and the TTM-DG's domains.

Demographic Questionnaire. This self-report questionnaire included age, gender, country of birth; level of education; socioeconomic status; religiosity; number of years of relationship; and number of children.

Physical Health Questionnaire (PHQ). This self-report questionnaire assesses the physical health of the caretaking spouse (Prizant, 2000). It includes nine items rated on a 3-point Likert scale. In this questionnaire, scales were reversed, so that high scores indicate poor physical health. Cohen-Levinson (2004) reported satisfactory reliability (α = .82). Reliability, as obtained in the present study, was high (α = .87).

Medical Outcomes Study Social Support Survey (MOS-SS). This questionnaire assesses social support (Sherbourne & Stewart, 1991). The questionnaire includes 19 self-report items rated on a 5-point "Likert" scale, with higher scores indicating greater social support. The researchers reported a very high internal consistency (α = .97). In the current study, a shortened 10-item version was used. Reliability as obtained in the present study was high (α = .88).

Table 1. Distribution of Demographic and Background Variables by Groups.

	Cognitive impairment (*n* = 62)	Control group (*n* = 32)	Statistical tests
Age (*M; SD*)	71.43 (10.50)	71.78 (9.65)	$F(1,91) = .024$, n.s
No. of women (%)	39 (62.9%)	20 (62.5%)	$\chi^2(1,94) = .001$; n.s
Country of birth (prevalence; %)	45 Israel (73.5%)	20 Israel (62.5%)	$\chi^2(5,93) = 4.812$; n.s
Years of education (*M; SD*)	14.24 (3.37)	15.22 (4.59)	$F(1,92) = 1.378$, n.s
Socioeconomic status (prevalence; %)	32 "Good" (51.6%)	18 "Good" (56.3%)	$\chi^2(3,94) = 7.045$; n.s
Religion (prevalence; %)	60 "Jewish" (96.8%)	30 "Jewish" (93.8%)	$\chi^2(1,94) = .474$; n.s
Religiosity (prevalence; %)	31 "Secular" (50%)	14 "Secular" (43.8%)	$\chi^2(4,94) = .699$; n.s
Religiosity (*M; SD*)	2.27 (1.30)	2.53 (1.24)	$F(1,82) = .778$, n.s
Years of spousal relationship (*M; SD*)	45.88 (13.51)	47.16 (12.14)	$F(1,90) = .198$, n.s
No. of children (*M; SD*)	3.11 (1.90)	3.06 (1.05)	$F(1,91) = .021$, n.s
Questionnaire administration (prevalence; %)	52 "Independently" (83.9%)	27 "Independently" (84.4%)	$\chi^2(1,94) = .004$; n.s
Physical health (*M; SD*)	1.75 (.49)	1.75 (.42)	$F(1,92) = .005$, n.s
Attachment total (*M; SD*)	2.44 (.92)	2.36 (.75)	$F(1,92) = .199$, n.s
Attachment anxiety subscale (*M; SD*)	2.31 (1.32)	1.94 (.99)	$F(1,92) = 1.963$, n.s
Attachment avoidance subscale (*M; SD*)	2.59 (1.09)	2.78 (1.00)	$F(1,92) = .695$, n.s
Sense of coherence (*M; SD*)	5.04 (1.05)	5.26 (.81)	$F(1,91) = 1.018$, n.s

Problematic Behavior Inventory (PBI). This self-report questionnaire was developed r to measure problematic behaviors in Alzheimer's patients (Pearlin et al., 1990). This questionnaire consists of 14 items, with a higher score indicating more behavioral disorders. The researchers reported a satisfying internal consistency ($\alpha = .79$). Reliability as obtained in the present study was very high ($\alpha = .93$).

Objective Burden Inventory (OBI). This self-report questionnaire measures the objective burden related to the caregiving features of the patient's spouse and their perceived impact (Montgomery et al., 1985). Participants are asked to indicate how much the role of the caregiver has affected their lives over nine major dimensions. The answers are rated on a five-point scale, with a higher score indicating a greater objective burden that has adversely affected the life of the caretaker. The researchers reported high internal consistency ($\alpha = .85$). Reliability as obtained in the present study was high ($\alpha = .86$).

Experiences in Close Relationships Scale (ECR-S). The original questionnaire was developed by Brennan et al. (1998) while the short version (Wei et al., 2007) has 12 items addressing the two basic dimensions of attachment patterns: anxiety and avoidance. Questionnaire items are designed as statements that describe patterns of emotions, behaviors, and cognition in close relationships and are rated on a Likert scale from 1 to 7 with higher scores indicating a greater level of attachment anxiety and avoidance. The researchers (Wei et al., 2007) reported satisfying internal consistency for both subscales: anxiety ($\alpha = .77$–.86) and avoidance ($\alpha = .78$–.88). Reliability in the present study was found to be satisfactory: general score ($\alpha = .73$); anxiety scale ($\alpha = .82$); avoidance scale ($\alpha = .62$). As expected, no correlation between anxiety and avoidance scales was found [$r(94) = .141$, n.s.].

Sense of Coherence Inventory (SOC-S). The original 29-item self-report questionnaire developed by Antonovsky (1983) measures sense of coherence (SOC). The ratings are on a 7-point scale ranging from "always" to "never" with higher scores indicating higher SOC. The 13-item version (Drori et al., 1991) has satisfactory internal consistency ($\alpha = .83$). Reliability as obtained in the present study was satisfactory as well ($\alpha = .80$).

The Two-Track Dementia Grief Questionnaire (TTDG-Q). This questionnaire was developed by Manevich et al. (2022a) to assess various aspects of people's reactions to the deterioration of a loved one as a result of progressive cognitive decline. This questionnaire is based on the Two-Track Bereavement Questionnaire for Complicated Grief (Rubin & Bar-Nadav, 2016), and includes items rated on a 5-point Likert scale. Higher scores indicate greater difficulties in coping and pre-death grief in the context of AD/ADRD caregiving. Factor analysis yielded four factors that correspond to the predictions of the Two-Track Model: one of bio-psycho-social functioning difficulties of the caregiver (Track I) and three reflecting the characteristics of the relationship with the individual living with AD/ADRD (Track II). That is, active relational grief and trauma, conflictual aspects of the relationship, and close and positive aspects of the relationship. To examine the research hypotheses, we used two equivalent and comparable versions of the questionnaire: the Two-Track Dementia Grief Questionnaire for SADRD; and the Two-Track Coping Questionnaire for the control group. The statistical analyses presented below were performed on two versions of the questionnaire: (a) a full questionnaire of 32 items ($\alpha = .85$) and a shortened version of 24 items ($\alpha = .81$) selected from the full questionnaire. The shortened version was used for the path analysis that included both the control group and the group of SADRD (aim 1) as it contained only those questions answered by
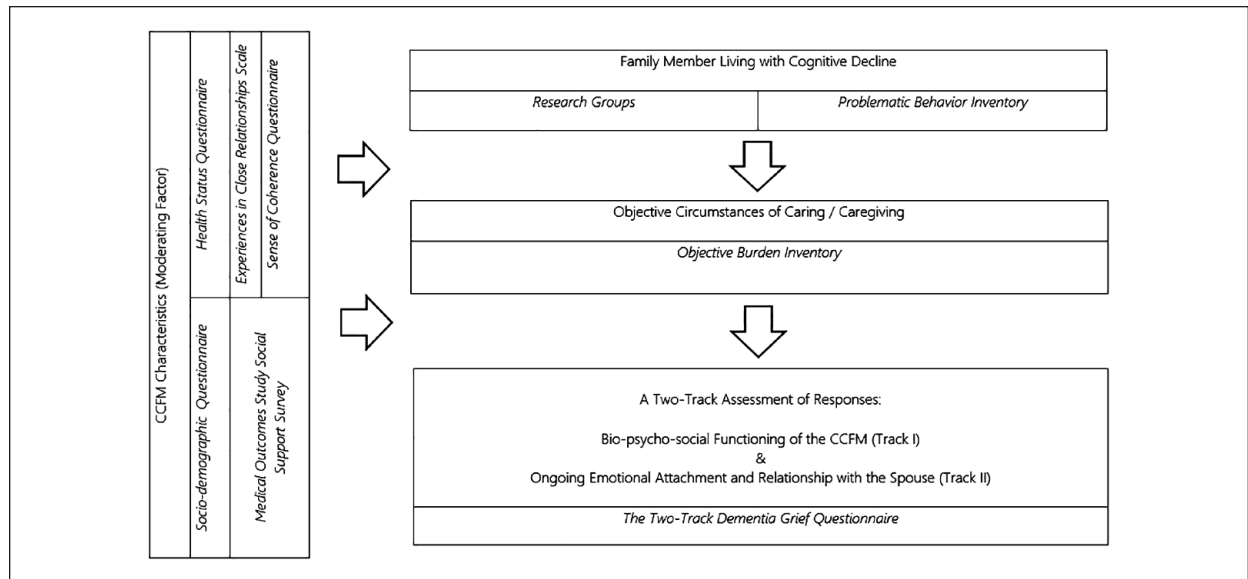
Figure 2. Research Questionnaires according to the Two-Track Model of Dementia Grief.

all participants. The full version was used for analyses conducted on the SADRD group as it included additional questions relevant only for that group (aim 2). For a chart summarizing the research questionnaires according to the domains of the TTM-DG, see Figure 2.

Procedure

The research questionnaires were completed by participants at home via printed or online questionnaires according to their individual preferences. For those participants who were interested in assistance in responding to the questionnaires, a personal meeting with a staff member at the home was arranged.

Results

Aim 1

In order to deepen understanding of the grief and coping processes that SADRD go through, a path model mapping the connections between the various research variables was undertaken. The analysis was guided by an explicit hypothesis and relied on the factors of TTM-DG (Rubin et al., 2021). The validity of the theoretical model and the set of relationships between all the research variables were tested using Structural Equation Modeling in the SAS University Edition software, for the purpose of testing and selecting the model with the best explanatory power among alternative models. Figure 3 below shows the results of the analysis, where the numbers marked on the arrows represent the beta values (β) and the numbers inside the rectangles with the name of the variable indicate the explained variance (R^2) for each variable.

As can be seen in Figure 3 the range of χ^2/df values is 1.288, a range that is considered a good fit. That is, a value lower than 2. The GFI fit index obtained is 0.981, the NFI fit index obtained is 0.964, and the CFI fit index is 0.991. That is, these values indicate a good fit of the model (values higher than 0.95). The RMSEA index obtained is 0.057, where a value considered good should be less than 0.06. That is, all the indices indicate a very good fit with the proposed theoretical model, according to the strict criteria defined by Schreiber et al. (2006).

The spouse's behavior disorders variable predicts the burden levels ($\beta = .62$) and this relationship was moderated by lack of social support ($\beta = .19$). The variables behavior disorders and dearth of social support together explain 45% of the variation in burden levels.

In addition, it was found that burden predicts the individual's level of dementia grief ($\beta = .37$), and this relationship was moderated by both poor physical health ($\beta = .40$) and high attachment anxiety levels ($\beta = .26$). Overall, the variables of burden, poor physical health, and anxiety levels in attachment accounted for a combined 50% of the variance in the outcome variable.

Aim 2

Next, we moved to identify the profile of the resilience and risk factors of maladaptive grief among the SADRD in our sample. The 32-item TTDG-Q was selected as the outcome criterion of the profile. The descriptive Table 2 below shows cut-off scores for the group of SADRD.

Analyses based on the median score for SADRD included all the independent variables in the study and are shown in Table 3 below. Those with a high score in the TTDG-Q (greater dementia grief) reported higher

Table 2. Cut-Off Scores on the TTDG-Q Among Spouses of People Living With AD/ADRD.

	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
Dementia (*n* = 62)	2.206	2.578	2.875	3.227	3.694

Table 3. Differences Between Risk and Resilience Groups Based on the Median Score in the TTDG-Q.

	Group		Statistical values		
	Resilience [*n*]	Risk [*n*]	F	η_p^2	$p<$
Burden	3.60 (.70) [32]	4.13 (.60) [30]	$F(1,60) = 10.191$	.145	.005
Tangible social support	3.94 (1.04) [31]	3.20 (1.29) [30]	$F(1,59) = 6.032$	.093	.05
Poor physical health	1.51 (.39) [32]	1.99 (.48) [30]	$F(1,60) = 18.739$	.238	.001
Sense of coherence	5.36 (.85) [31]	4.71 (1.15) [30]	$F(1,59) = 6.342$	.097	.05

Table 4. Differences Between Risk and Resilience Groups Based on the Quartile Scores in the TTDG-Q.

	Group		Statistical values		
	Resilience [n]	Risk [n]	F	η_p^2	$p<$
Problematic behavior	1.65 (.74) [14]	2.34 (1.01) [15]	$F(1,27) = 4.360$	.139	.05
Burden	3.30 (.58) [15]	4.36 (.58) [15]	$F(1,28) = 24.590$	.468	.001
Tangible social support	4.36 (.69) [14]	2.97 (1.11) [15]	$F(1,27) = 16.122$	.374	.001
Age	74.9 (10.00) [15]	66.67 (14.01) [15]	$F(1,28) = 3.430$	.109	= .075
Religiosity	2.03 (1.35) [13]	3.06 (1.31) [14]	$F(1,25) = 4.066$	.140	= .055
Poor physical health	1.41 (.41) [15]	2.13 (.49) [15]	$F(1,28) = 18.900$	.403	.001
Attachment total	2.09 (.52) [15]	2.81 (1.08) [15]	$F(1,28) = 5.432$	.162	.05
Attachment anxiety	1.72 (.71) [15]	3.13 (1.57) [15]	$F(1,28) = 10.078$	.265	.005
Sense of coherence	5.78 (.82) [15]	4.29 (1.34) [15]	$F(1,28) = 13.336$	.323	.005

levels of objective burden and poorer physical health, alongside lower levels of a sense of coherence and tangible social support.[3]

Next, in order to allow better differentiation between participants who reported high distress and those who did not, analyses were conducted for the SADRD by use of the lower quartile ("resilience" group) and the upper quartile ("risk" group for maladaptive grief responses) to assess scores in the full TTDG-Q. The analyses showed a significant difference in the proportion of secular versus religious amongst the two groups was present. In the upper quartile, most of them were religious with different levels of belief ($\chi^2(1,30) = 6.533$, $p < .05$). The other variables in which differences were found are presented are described in Table 4.

As can be seen from the findings above, SADRD who belonged to the upper quartile on TTDG-Q scores were marginally younger and with a higher levels of religious belief. Also, participants classified as at risk for maladaptive grief reactions had less tangible social support; reported higher levels of spousal behavioral disturbance, greater burden, and poorer physical health; were characterized by insecure attachment (according to general score and anxiety subscale); and scored lower on the personality measure sense of coherence.

Discussion

In the discussion, we begin with a consideration of the findings for the entire sample and their significance. Next, we address the findings with the SADRD participants sorted according to the TTDG-Q into: (a) higher and lower levels of dementia grief divided by the median scores; and (b) resilient and risk groups using the lower and upper quartiles as the criterion. We then continue with the discussion of resilience and risk factors and their significance. Following that, we conclude with a consideration of the limitations of the study, suggestions for future research, and a summary section.

General Findings

In the first analysis, a path model to map the relationships between the various research variables on the basis of the TTM-DG was proposed. The research model presented in Figure 3 yielded six variables consistent with the proposed theoretical model: (a) the partner's behavioral disorders; (b) burden; (c) lack of social support; (d) poor physical health; (e) attachment anxiety; and (f) dementia grief (i.e., bio-psycho-social dysfunction and the relationship with the spouse) as an outcome measure. A positive relationship was found between the neuropsychiatric disorders of the spouse living with AD/
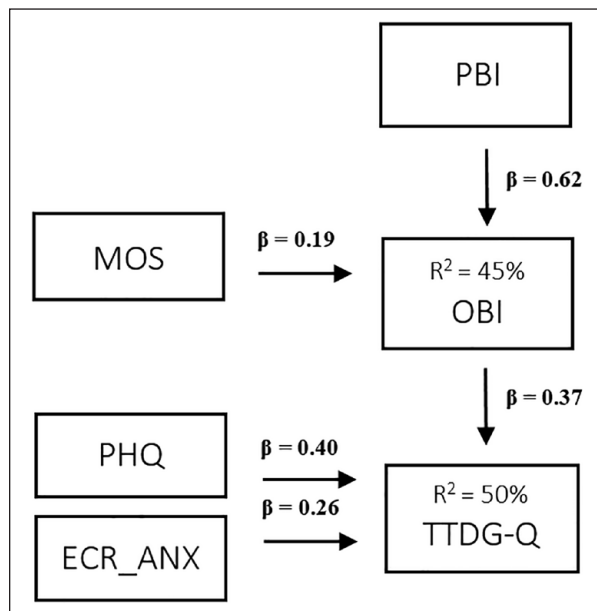
Figure 3. Structural equation modeling (SEM): the relationships between the research variables. $\chi^2/df = 1.288$; GFI = 0.981; NFI = 0.964; CFI = 0.991; RAMSEA = 0.057. PBI = Problematic Behavior; OBI = Objective Burden; MOS = (lack of) Social Support; PHQ = (Poor) Physical Health; ECR_ANX = Attachment Anxiety; TTDG-Q = Dementia Grief.

ADRD and the level of burden experienced by the healthy spouses, a relationship that is moderated through low levels of social support. The overall level of burden is positively related to the outcome measure with a greater burden yielding more pronounced dysfunction and dementia grief. The findings also show that the relationship between burden and the outcome measure is moderated by the attachment anxiety subscale and physical health, so that high levels of anxiety in attachment and poor physical health are associated with greater distress that goes beyond the effects of the burden variable. The path model proposed and confirmed for the current study had the optimal explanatory power, both in terms of significance and in terms of fit indices, and this was in comparison to alternative models that were tested. Since to our knowledge this is the first validation study of the theoretical model of the TTM-DG and the limitations of the sample size, we recommend that follow-up studies will be based on larger participant samples which will allow for the inclusion of a greater number of variables and hypotheses, thus contributing to improving its explanatory power.

We conducted analyses to identify resilience and risk factors for maladaptive grief responses. Dividing the sample according to the median score of the TTDG-Q for only the SADRD examined the connection to the background variables in the current study. We found the following: a high score on the TTDG-Q (i.e., greater dementia grief) was associated with higher levels of burden, poorer physical health, and lower levels of sense of coherence and tangible social support. Next, we

considered the groups whose scores on the criterion measure of the TTDG-Q placed them at both ends of the group responses. The 25% in the lowest quartile had the least difficulties (resilience group) and the 25% with the most difficulties placing them in the upper quartile with the most difficulties (risk group). In this way, we were able to more sharply focus on the factors associated with adaptive and maladaptive grief reactions. On background variables, a significant difference was found on the religion factor such that in the resilient quartile most of the participants were secular, while in the risk quartile, the majority endorsed having religious faith. Spouses who belonged to the risk quartile were: younger and endorsed higher levels of religious adherence (as a continuous variable) at marginally significant levels; had less tangible social support; reported higher levels of behavioral disorders, greater burden, and had poorer physical health; were characterized by insecure attachment (on both general score and the anxiety subscale); and scored at lower levels of sense of coherence.

Risk and Resilience Factors in Spousal Experience of Dementia Grief

Based on the results presented and summarized above, we now turn to consider the individual factors that have a significant impact on the reactions of SADRD according to the categories of the TTM-DG.

Behavioral Disorders. This variable includes a variety of behavioral and mental symptoms that typically appear with the progression of the disease, such as aggression, restlessness, and paranoid delusions. These severe symptoms are among the main causes of distress among caregiving family members (Georges et al., 2008). Our research findings are consistent with past research regarding the relationship between the person's living with AD/ADRD behavioral disorders and their adverse outcomes on caregivers in general and higher levels of pre-death grief in particular (e.g., Cheng et al., 2019; Liew et al., 2019; Park et al., 2019).

Burden. Caregiving for a loved one living with AD/ADRD involves providing assistance in daily activities and may be accompanied by a loss of personal freedom, a reduction of external involvement (e.g., employment and leisure activities), financial difficulties, and shrinkage of the social world. The findings of the present study are in line with the existing empirical database on the issue of the adverse consequences of the level of burden and personal sacrifice as a result of the caregiver's role in the functional and mental state of the family members of a person living with AD/ADRD (e.g., Cheng et al., 2019; Holley & Mast, 2009; Meichsner et al., 2020). The interaction between the objective aspects of burden and the subjective elements involved also suggest that better psychological relationships with the ill spouse

mitigate to some degree the experience of burden (Yehene et al, 2021).

Social Support. The existence of a social support system is a highly valuable resource for people in general and in the process of adapting to loss in particular (Stroebe et al., 2005; Vanderwerker & Prigerson, 2004; Vedder et al., 2022). Moreover, the unique elements that characterize the grief and mourning for a person living with AD/ADRD impact the degree to which the losses involved are recognized, legitimized, or socially supported. As a "disenfranchised" form of grief or an ambiguous loss, spousal dementia is a risk factor precisely for its lack of recognition as a type of loss thereby minimizing social support (Doka, 2008). The present study findings are consistent with past studies that underscore the significance of social support in coping with the loss of a spouse in general (Gyasi & Phillips, 2020) and due to cognitive decline in particular (e.g., Moore et al., 2020; Robinson-Whelen et al., 2001; Romero et al., 2014). These findings are validated on this sample of Israeli older adults. Social support remains a topic of particularly high importance, which is only underscored in light of the research evidence that increasing age is associated with increased feeling of loneliness (Cohen-Mansfield et al., 2009). The latter is significant predictor of depressive symptoms among older adults (Bodner & Bergman, 2016).

Physical Health. Thus far, studies have reported inconclusive findings regarding the relationship between the physical health of the caregiver and his or her well-being (Crawley et al., 2022). In our sample, poor physical health predicted distress among spouses caring for a partner living with AD/ADRD. This is consistent with previous studies documenting the relationship between health problems of the caregiver and depressive symptoms (e.g., Cucciare et al., 2009; Schulz et al., 1995). The current findings highlight the relative contribution of physical health problems of the caregivers to their levels of pre-death grief reactions.

Religious Belief. Although religious belief has often been considered as being associated with improved well-being, belief, and religious affiliation do not guarantee an adaptive response to loss (Rubin et al., 2012). Traumatic events, such as severe illness and loss may cause a fracture in the experience of the "self" and the connection to religious belief and spirituality. If the spiritual world of the individual is damaged, constructing and reconstructing the religious and spiritual domain can be helpful. In much the same way that adapting to bereavement and loss brings with it the need to construct new meanings to self and a life without the loved one, a similar challenge may be experienced with regard to the religious and the spiritual (Neimeyer et al., 2006; Smid, 2020). In contrast to Hebert et al. (2007), in our study, greater religious adherence was associated with greater

risk. It may be that the unique circumstances of caregiving for a loved one living with AD/ADRD (e.g., its prolonged duration, the presence of neuropsychiatric disorders, and the lack of legitimacy to grieve) constitute an extreme stress factor that undermines the previous meaning and belief system of the caregiver, and thus lead to adjustment difficulties. Furthermore, unlike bereavement as a result of death in which religion provides community support frameworks, a belief system, rituals and behavioral norms, the process of grieving and caretaking for a loved one suffering from progressive cognitive impairment lacks these social and community supports that organized religion may provide (Doka, 2019).

Sense of Coherence. Sense of Coherence (SOC) is a psychological construct that is associated with effective coping and adaptation to different life situations. A SOC is defined as a general orientation through which a person perceives the world as comprehensible, manageable, and meaningful (Griffiths et al., 2011). In our study, the SOC was a predictor of both the high and low scorings on the TTDG-Q as well as on the resilience and risk groups. Previous studies have found that a high SOC may promote mental resilience in coping with dramatic life events, such as malignancy (Boscaglia & Clarke, 2007), and partner's cognitive impairment (Gonçalves-Pereira et al., 2021; Marques et al., 2019; Potier et al., 2018). The inclusion of a personality measure advances the research on coping with dementia grief in the context of caregiving for a spouse living with AD/ADRD.

Attachment Pattern. Our study showed that attachment variables appeared in the overall path analysis and on the division into quartiles for the risk vs. resilient groups. In the latter, both overall attachment difficulties as well as anxious attachment were significantly associated with greater risk for heightened dementia grief. In our understanding, these results reflect both the significance of the attachment bond at the root of the spousal relationship as well as the greater resilience afforded by the more secure attachment style in response to stressful events.

The findings of the current study are consistent with the rich documentation in the professional literature regarding the effect of the quality of the attachment pattern on the individual's perception of self and others, his interpersonal relationships and his emotional functioning throughout the life cycle (Cassidy & Shaver, 2016). Past studies have found that the person's attachment pattern may make a significant contribution to promoting his or her adaptation in light of coping with the loss of a significant other in general (Burke & Neimeyer, 2013; Levi-Belz & Lev-Ari, 2019; Mikulincer & Shaver, 2022) and as a result of cognitive decline in particular (Karantzas et al., 2019; Manevich et al., 2022b); in a way that secure attachment has been found to be related

to the well-being of the main caregiver and is a psychological basis that promotes the ability to provide support and care for others (Nelis et al., 2014). The current work further advances the understanding of the relationship between the individual's attachment pattern and his or her pre-death grief reactions in the context of caregiving for a spouse living with AD/ADRD. Our findings lend support to the inclusion of attachment-informed approaches to psychotherapeutic interventions with grieving individuals (Kosminsky & Jordan, 2016) including those responding to AD/ADRD.

Limitations and Suggestions for Further Research

The current research had several limitations to consider. Overall, the findings should be considered as preliminary, due to sample size limitations. The non-probabilistic convenience sample constituting the present study was not designed to be representative of the population in Israel, thereby limiting the extent to which one may generalize to the broader population. Moreover, the reliance on self-report questionnaires does not exclude the possible impact of various factors, such as social desirability and different personality patterns. Finally, this study is cross-sectional, thus it excludes the possibility of deducing causality between the variables under investigation. Future research incorporating prospective as well as cross-sectional designs with repeated measurements of the process of spousal coping over time across the duration of the illness both pre and post-death will be particularly important (Manevich et al., 2022a, 2022b). The use of theory driven approaches such as that of the TTM-DG conceptualizing both bio-psycho-social functioning of the spousal caregiver and their ongoing relationship to the ill spouse allow for a robust approach to studying the processes of coping with the losses and stressors involved. We recommended that future and follow-up studies expand the number of participants which will allow for the inclusion of additional variables to study with the requisite statistical explanatory power.

Summary and Conclusions

The research findings in this study provide empirical support for the utility of the Two-Track Model of Dementia Grief (Rubin et al., 2021). The TTM-DG provides an approach and virtual "map" that assists in the clinical assessment and research approaches required to identify the strengths and weaknesses of clients whose loved ones live with AD/ADRD. Based on the model's components, the intensity, duration, frequency, and characteristics that trigger or assist in alleviating these reactions should be taken into consideration. Their measurement can assist in the identification of whether and where to provide clinical intervention. On the basis of the path analysis and follow-up analyses conducted, we

were able to identify and differentiate variables that contribute to risk and resilience in situations of spousal care for partners with dementia. Caring for the spouses of partners with progressive cognitive impairment and dementia requires sustained responses from researchers, clinicians, and society to better understand the needs and resources of this ever-growing population.

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Notes

1. A detailed description of the model's components can be found in Rubin et al. (2021).
2. For a distribution table of medical diagnoses in the sample, see Manevich et al. (2022a)
3. Tangible social support is one of the four factors of the questionnaire ($\alpha = .91$).

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