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Life satisfaction of carers of people with dementia of the Alzheimer type

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Summary

Aim. The aim of the study was to examine the correlation between personal resources, care burden and life satisfaction in carers of people with dementia of the Alzheimer type.

Material and method. The study involved 100 family and professional carers providing care for individuals with dementia of the Alzheimer type. Participants answered survey questions and completed the following questionnaires: Orientation to Life Questionnaire – SOC-29, General Self-Efficacy Scale (GSES), Social Support Questionnaire (F-SozU K-22), Depression Assessment Questionnaire (KPD), Perceived Stress Questionnaire (KPS), Involvement Evaluation Questionnaire (IEQ) and Satisfaction with Life Scale (SWLS).

Results. Higher levels of a sense of satisfaction with life were observed among carers who had higher education, were the sole carer of a person with the illness, and who spent less time providing care. Higher levels of available resources and a lower sense of care burden (fewer depressive symptoms, less involvement in care and lower stress levels) were associated with a higher sense of life satisfaction. Higher levels of depressiveness and perceived stress reduce the level of life satisfaction.

Conclusions. Personal resources play an important role among carers in reducing caregiving burden and maintaining adequate levels of life satisfaction. Proper management of the resources available to carers is important to counteract the negative consequences of caring for a person with dementia.

Key words: life satisfaction, personal resources, burden of care

Introduction

Providing long-term care for a person with dementia of the Alzheimer type is associated with the risk of a significant decline in psychosocial functioning, a sense of burden, significant social isolation [1], depression, anxiety, and a decline in quality of life [2]. Over time, and with the deterioration of the care recipient’s condition, the carer’s level of responsibility increases, leading to considerable overload and the development of depressive and anxiety symptoms. Research indicates a positive correlation of burden with depression and anxiety, and a negative correlation with self-rated health, carer's quality of life and general well-being [3]. Some studies refer to the positive effects of caregiving, suggesting that increased life satisfaction, personal and spiritual growth, and improved interpersonal relationships may be benefits of providing care [4].

The inclusion of quality of life issues among carers in research is of particular importance in the therapeutic process. Providing care for a sick person becomes a source of chronic stress beyond the adaptive capacities of the carer and it modifies the carer's previous ways of functioning. For this reason, many carers who are aware of their situation seek support and assistance to overcome the difficulties arising from caregiving [5]. A quality of life survey of carers assesses their actual capacity to provide long-term care for a sick person [6]. It becomes a determinant of the quality of care provided and is, therefore, vital for improving the patient's functional condition and is associated with a lower risk of institutionalisation [7].

The concept of life satisfaction is a diverse, multifaceted notion, identified in the literature by closely related terms, i.e. contentment with life, happiness, quality of life, and psychological well-being [8]. In the most general terms, life satisfaction can be defined as the positive evaluation an individual makes of his or her life [9]. Life satisfaction is associated with the ability to accomplish major life goals [10]. The cognitive evaluation of one's own situation in reference to accepted standards determines the level of subjectively experienced negative and positive feelings in relation to the degree of completion of self-assigned tasks [11]. The positive dimension of care not only involves the absence of negative feelings but also includes a subjective sense of achieving benefits and a sense of personal growth as a result of providing care [12]. Among the factors that influence life satisfaction are those that are independent of the individual, i.e. health condition and temperament, as well as those that depend heavily on the person's own activities [13].

Long-term care of a patient with dementia is associated with an ever-increasing sense of helplessness and hopelessness experienced by the patient's carers. Focusing solely on the negative aspects of one's situation entails a gradual decline in motivation, a lower level of mental health, and neglect in providing care [14]. The burdensome nature of caregiving, combined with a lack of appropriate support and deteriorating functioning in family, social and professional life, substantially affects the psychological functioning of carers and their subjective and objective quality of life [15].

A lower quality of life is also associated with carers experiencing a substantial burden in their lives, not only as a result of their caregiving roles but also because of limitations in other non-caregiving relationships and activities. Loss of social ties and social support represents some of the most negative factors affecting quality of life, contributing to a higher risk of death, lower self-rated health status, and impaired psychological functioning [16]. Viewing the care situation as difficult and permanent results in a negative evaluation of carers' lives. A greater sense of satisfaction with the care provided is correlated with better functioning of the care recipient and a higher level of perceived social support. A low sense of life satisfaction is associated with the carer experiencing anxiety about the future, deteriorating health of the care recipient, and increased stress levels. It is therefore possible to perceive the carer's quality of life as a predictor for assessing the quality and capacity of the care they provide. The greater the sense of satisfaction with the caregiving role, the better the well-being and functional condition of the care recipient [17].

The number of challenges faced by carers plays a significant role in the assessment they make of their lives. Recognition of the benefits of providing care entails an increased sense of satisfaction with their role and with their lives as a whole. One of the crucial variables mediating the relationship between stress and feelings of satisfaction proved to be hope. The stress arising from caregiving, as perceived by carers, had a lower negative impact on the development of life satisfaction when hope was present [18]. The stress process model is one of the models used to explain carers' stress. The main source of stress for carers stems from problems directly related to their caregiving role. The stress experienced by carers is a consequence of a process that involves different types of variables, i.e. socioeconomic characteristics, the coping resources used by carers, tensions arising from the caregiving role, the amount of non-caregiving activities, care fatigue, the level of dependency of the care recipient, conflict between personal activities and caregiving, and the amount of support received. These factors are key stressors for predicting poorer well-being among carers and lower life satisfaction [19].

Viewing the issue of carers in relation to the negative aspects of caregiving results in insufficient awareness of the benefits of caregiving, including a lack of data on life satisfaction. Therefore, the aim of this study was to determine: (1) whether there is a correlation between personal resources and life satisfaction among carers of people with Alzheimer's disease; (2) whether care burden explains the mechanism behind life satisfaction; and (3) whether the indirect relationship between personal resources and feelings of satisfaction with life is mediated by the care burden. In line with existing findings, we hypothesised that: there is a correlation between personal resources and feelings of satisfaction with life experienced by carers of people with Alzheimer's disease (Hypothesis 1); care burden explains the mechanism underlying life satisfaction (Hypothesis 2); and care burden mediates the strength of the correlation between personal resources and life satisfaction (Hypothesis 3). Differences between groups in terms of path estimation were also assessed. All hypotheses and correlations between variables are shown in Figure 1.

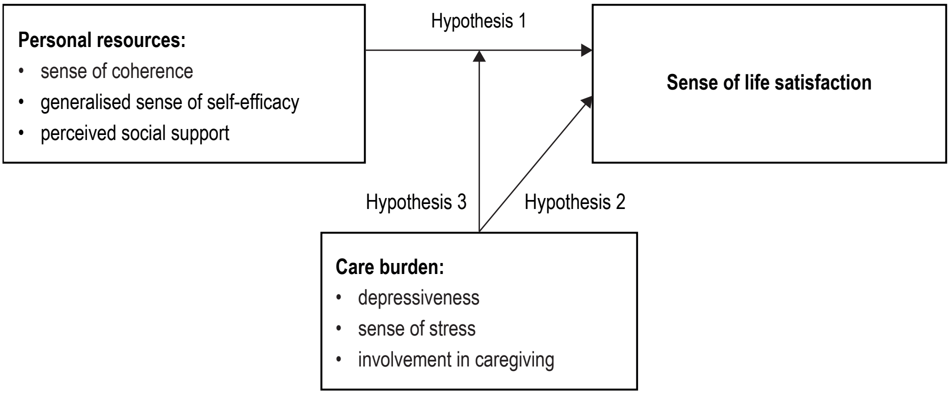

Figure 1. **Theoretical model of the correlation between variables**

Material

The study involved 50 family and 50 professional carers (with appropriate professional backgrounds) providing care for persons with dementia of the Alzheimer type. The mean age of the carers was 55 years, *M* = 55.84 (*SD* = 13.36). The mean duration of care was 5 years (*SD* = 4.25). A total of 47% of the care recipients used multiple sources of additional support (i.e. social worker, occupational therapist, community support group, psychologist, or day ward for patients), 37% used only one source of support, and 16% of the care recipients did not use any additional forms of support. Among the family carers, 46% were adult children of the care recipients and 34% were spouses or partners. Other relatives, friends, and siblings of the care recipients accounted for a smaller proportion of the family carers. Carers invested an average of 29 hours per week in providing care, *M* = 28.82 (*SD* = 6.39). The largest group, at 64%, included stage two patients, 19% were stage 3 patients, and 17% were stage 1 patients. The stage of the disease was verified by a neurologist at a specialised testing centre. The majority of respondents were women (78%), with men accounting for 22% of the group.

The respondents were recruited from the Clinical Research Centre in Szczecin and from a residential care home. The criterion for the admission to the group was being the primary carer of a person with the disease. Participation in the study was voluntary. Key inclusion criteria were a minimum duration of caregiving of two years, at least eight hours of care per week, and caring for a patient with dementia of the Alzheimer type. Carers whose care recipients had died, underage carers, and those providing care for patients with other types of dementia were excluded from participation in the study. The study received a positive evaluation from the Ethics Committee of the Institute of Psychology at the University of Szczecin (KB 2/2017).

Method

Respondents completed a self-administered sociodemographic questionnaire. Carers' personal resources were assessed using the Orientation to Life Questionnaire (SOC-29), the General Self-Efficacy Scale (GSES), and the Social Support Questionnaire (F-SozU K-22). Care burden was evaluated using the Depression Assessment Questionnaire (KPD), the Perceived Stress Questionnaire (KPS), and the Involvement Evaluation Questionnaire (IEQ). Life satisfaction was measured using the Satisfaction with Life Scale (SWLS).

The survey focused on the following sociodemographic variables: age, sex, education level, stage of illness, duration of illness, number of hours of care, and relationship with the care recipient. The Orientation to Life Questionnaire is a tool used to measure global sense of coherence and its three components: sense of comprehensibility, sense of manageability, and sense of meaningfulness. The Social Support Questionnaire is designed to assess perceptions of social support, i.e. the subjective belief of an individual about the existence and availability of support. The components of support include emotional support, practical support, and social integration. The General Self-Efficacy Scale measures the sense of self-efficacy, i.e. an individual's confidence that they have the resources to cope with difficulties. The Depression Assessment Questionnaire assesses symptoms associated with the presence of mood disorders and the diagnosis of depression. The questionnaire consists of five scales concerning behaviours, thoughts, and feelings that are relevant to the picture of depression, as well as a self-regulation scale. The Perceived Stress Questionnaire is designed to measure sensations of stress. The results indicate the level of generalised stress and its three dimensions: emotional tension, external stress and intrapsychic stress. The Involvement Evaluation Questionnaire provides an assessment on the level of involvement in the care of a person with a dementia disorder. The outcomes of the questionnaire provide a basis for evaluating subjective and objective burden. The assessment of subjective burden makes it possible to evaluate the reciprocal relationship between the carer and the care recipient, and to assess the level of concern experienced by the carer in relation to the care recipient. The assessment of objective burden makes it possible to evaluate the severity of the difficulties experienced by the carer as a result of caregiving activities and to assess the extent to which the carer takes control over aspects of the care recipient's life. The Satisfaction with Life Scale is used to measure a general index of feelings of satisfaction with life. Respondents relate the statements in the questionnaire to their previous experiences.

Results

A statistical analysis was carried out to determine the correlation between the study variables using the Pearson correlation coefficient (*r*). Structural equation modelling was also performed using the partial least squares method (SEM-PLS) in WarpPLS

6.0 [20]. The statistical analysis of correlation coefficients between life satisfaction and demographic factors showed statistically significant correlations with education ($r = 0.329$; $p < 0.01$), time spent providing care ($r = -0.249$; $p < 0.05$), and the use of various sources of assistance by care recipients ($r = -0.268$; p < 0.01). This implies that as carers' educational level increases, their satisfaction with life also increases. The longer the period of time carers spend caring for a care recipient, the less satisfaction they feel. The use of multiple sources of assistance and institutional support by care recipients is also associated with a lower sense of life satisfaction among carers. The results are presented in Table 1.

Table 1. **Correlation coefficients between feelings of satisfaction with life and sociodemographic and care-related factors**

	Sense of life satisfaction
Age	0.143
Sex	0.148
Education level	0.329**
Duration of care (in years)	0.001
Assistance to the care recipient	-0.268**
Time spent with the care recipient (hours/week)	-0.249*
Stage of disease	-0.041

Determination of significance level: * $p < 0.05$; ** $p < 0.01$

The statistical analysis of correlation coefficients between feelings of satisfaction with life and carers' personal resources showed statistically significant correlations of general sense of coherence ($r = 0.577$; $p < 0.01$) and its dimensions: sense of comprehensibility ($r = 0.440$; $p < 0.01$), sense of manageability ($r = 0.550$; $p < 0.01$) and sense of meaningfulness ($r = 0.520$; $p < 0.01$) with feelings of satisfaction with life. This indicates that as the general sense of coherence and all its dimensions increase, the level of satisfaction with life also increases. Further analysis revealed statistically significant correlations between perceived social support ($r = 0.439$; $p < 0.01$) and its dimensions – emotional support ($r = 0.438$; $p < 0.01$), practical support ($r = 0.216$; $p < 0.05$) and social integration ($r = 0.385$; $p < 0.01$) – and life satisfaction. The greater the level of perceived social support and all its dimensions, the greater the sense of satisfaction with life. A statistically significant correlation was also observed between sense of self-efficacy ($r = 0.318$; $p < 0.01$) and sense of life satisfaction. Carers who had a higher sense of self-efficacy manifested higher levels of life satisfaction. The statistical analysis of correlation coefficients between life satisfaction and care burden revealed statistically significant correlations with depressiveness ($r = -0.244$; $p < 0.05$), sense of stress ($r = -0.486$; $p < 0.01$) and involvement in caregiving ($r = -0.235$; $p < 0.05$). This suggests that as depressiveness, sense of stress and involvement in caregiving increase, the level of life satisfaction decreases. The results are presented in Table 2.

Table 2. **Correlation coefficients between life satisfaction and carers' personal resources**

	Sense of life satisfaction
General sense of coherence	0.577**
Sense of comprehensibility	0.440**
Sense of manageability	0.550**
Sense of meaningfulness	0.520**
Perceived social support	0.439**
Emotional support	0.438**
Practical support	0.216*
Social integration	0.385**
Generalised sense of self-efficacy	0.318**
Depressiveness	-0.244*
Sense of stress	-0.486**
Involvement in caregiving	-0.235*

Determination of significance level: * $p < 0.05$; ** $p < 0.01$

The analysis of model fit coefficients showed that the model was free from average and full collinearity (AVIF = 1.39; AFVIF = 1.73), and had strong predictive power (GoF = 0.57). The analysis demonstrated that the signs and magnitude of the independent correlation coefficients were similar to those of the path coefficients tested in the model (SPR = 0.87; SSR = 0.80). The model fit statistics are presented in Table 3.

Table 3. **Model fit statistics**

Coefficient	**Value**
AVIF	1.39
AFVIF	1.73
Tenenhaus GoF	0.57
SPR	0.87
SSR	0.80

Comments: AVIF = Average Variance Inflation Factor (acceptable if AVIF <5.00; ideally if AVIF <3.30); AFVIF = Average Full Variance Inflation Factor (acceptable if AVIF <5.00; ideally if AVIF <3.30); GoF = Goodness of Fit, expressed as the generalised predictive power of the model (low if GoF <0.10; average if GoF >0.25; high if GoF >0.36); SPR = Simpson's Paradox Ratio (acceptable if SPR <0.70; ideal if SPR <1.00); SSR = Statistical Suppression Ratio (acceptable if SSR <0.70; ideal if <1.00).

The analysis of path coefficients for the model showed that as the scores of sense of coherence increased, the scores measuring life satisfaction also increased, and the scores of depressiveness, sense of stress, and involvement in caregiving decreased. Further analysis revealed that an increase in scores measuring perceived social support was correlated with a decrease in scores of sense of stress and an increase in scores of life satisfaction. It was also observed that as scores of generalised sense of self-efficacy increased, scores measuring involvement in caregiving also increased. The analysis in the further part of the model showed that depressiveness and sense of stress lowered the scores measuring life satisfaction. No other significant correlations were observed between the study variables. The magnitudes of the path coefficients in the tested model are presented in Table 4. The analysis of the coefficients of explained variance demonstrated that the variables explained life satisfaction levels the most strongly ($R^2 = 0.42$) and involvement in caregiving the least strongly ($R^2 = 0.13$). The results of the explained variance analysis are presented in Table 5.

Table 4. **Magnitude of the path coefficients in the tested model**

β	**Sense of coherence**	**Perceived social support**	**Sense of self-efficacy**	**Depressiveness**	**Sense of stress**	**Involvement in caregiving**
Sense of life satisfaction	**0.41**	**0.17**	0.11	**-0.31**	**-0.31**	-0.10
Depressiveness	**-0.44**	-0.11	-0.13	-	-	-
Sense of stress	**-0.47**	**-0.21**	-0.06	-	-	-
Involvement in caregiving	**-0.40**	0.06	**0.28**	-	-	-
p	**Sense of coherence**	**Perceived social support**	**Sense of self-efficacy**	**Depressiveness**	**Sense of stress**	**Involvement in caregiving**
Sense of life satisfaction	<0.001	0.036	0.127	<0.001	<0.001	0.161
Depressiveness	<0.001	0.138	0.096	-	-	-
Sense of stress	<0.001	0.015	0.271	-	-	-
Involvement in caregiving	<0.001	0.288	0.002	-	-	-

Comment: β = Beta standardised coefficient; *p* = statistical significance

Table 5. **Explained variance in the dimensions of involvement in caregiving, depressiveness and sense of stress, as well as life satisfaction**

Measurement	R^2	ΔR^2	Q^2
Sense of life satisfaction	0.45	0.42	0.45
Depressiveness	0.30	0.28	0.30

table continued on the next page

Sense of stress	0.38	0.36	0.38
Involvement in caregiving	0.15	0.13	0.16

Comments: R^2 = coefficient of explained variance; ΔR^2 = adjusted ΔR^2; Q^2 = non-parametric equivalent of R^2

A mediation analysis was performed in WarpPLS to verify the mediating role of the dimensions of involvement in caregiving, depressiveness, and sense of stress in the relationship between the dimensions of sense of coherence, generalised self-efficacy, and perceived social support and between life satisfaction [21]. The introduction of mediators into the relationship between sense of coherence, generalised sense of self-efficacy, and perceived social support and between life satisfaction revealed no significant mediating effects between the study variables. The mediating variables were found to be insignificant. The outcomes are presented in Table 6.

Table 6. **Outcomes of the mediation analysis of care burden dimensions between sense of coherence, generalised sense of self-efficacy and perceived social support and life satisfaction**

β	**Sense of coherence**	**Perceived social support**	**Sense of self-efficacy**
Sense of life satisfaction	0.05	0.03	-0.05
p	**Sense of coherence**	**Perceived social support**	**Sense of self-efficacy**
Sense of life satisfaction	0.309	0.393	0.317

Comment: β = Beta standardised coefficient; *p* = statistical significance

A multi-group analysis (MGA) technique was conducted to assess the differences between groups of carers (formal vs informal) in terms of path coefficients [22]. The MGA showed a significant difference between the groups in terms of the strength of the relationship between perceived social support and involvement in caregiving. In the group of informal (family) carers, an increase in perceived social support was associated with a decrease in care involvement scores ($\beta = -0.21$). In contrast, the opposite pattern of results was observed in the group of formal (professional) carers ($\beta = 0.38$) – in this group, an increase in perceived social support scores was associated with an increase in care involvement scores. Further analysis showed a significant difference between path coefficients in the two groups in terms of the relationship between generalised sense of self-efficacy and sense of life satisfaction scores. It was also observed that, in the formal carers group, an increase in sense of self-efficacy scores was more strongly associated with an increase in scores of sense of life satisfaction ($\beta = 0.44$) than in the formal carers group ($\beta = 0.11$). The results of the MGA are shown in Table 7.

Table 7. **Differences between groups of carers (formal vs informal) in terms of path coefficients**

<table>
<tr><th colspan="7">Informal carers</th></tr>
<tr><th>β</th><th>Sense of coherence</th><th>Perceived social support</th><th>Sense of self-efficacy</th><th>Depressiveness</th><th>Sense of stress</th><th>Involvement in caregiving</th></tr>
<tr><td>Sense of life satisfaction</td><td>0.32</td><td>0.17</td><td>0.11</td><td>0.10</td><td>-0.35</td><td>-0.08</td></tr>
<tr><td>Depressiveness</td><td>-0.50</td><td>0.00</td><td>-0.02</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Sense of stress</td><td>-0.30</td><td>-0.39</td><td>-0.04</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Involvement in caregiving</td><td>-0.46</td><td>-0.21</td><td>0.36</td><td>-</td><td>-</td><td>-</td></tr>
<tr><th colspan="7">Formal carers</th></tr>
<tr><th>β</th><th>Sense of coherence</th><th>Perceived social support</th><th>Sense of self-efficacy</th><th>Depressiveness</th><th>Sense of stress</th><th>Involvement in caregiving</th></tr>
<tr><td>Sense of life satisfaction</td><td>0.24</td><td>0.33</td><td>0.44</td><td>0.19</td><td>-0.17</td><td>-0.22</td></tr>
<tr><td>Depressiveness</td><td>-0.58</td><td>-0.19</td><td>-0.05</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Sense of stress</td><td>-0.53</td><td>-0.13</td><td>-0.06</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Involvement in caregiving</td><td>-0.27</td><td>0.38</td><td>0.26</td><td>-</td><td>-</td><td>-</td></tr>
<tr><th><i>p</i></th><th>Sense of coherence</th><th>Perceived social support</th><th>Sense of self-efficacy</th><th>Depressiveness</th><th>Sense of stress</th><th>Involvement in caregiving</th></tr>
<tr><td>Sense of life satisfaction</td><td>0.329</td><td>0.175</td><td>0.035</td><td>0.308</td><td>0.164</td><td>0.232</td></tr>
<tr><td>Depressiveness</td><td>0.303</td><td>0.160</td><td>0.442</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Sense of stress</td><td>0.086</td><td>0.078</td><td>0.466</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Involvement in caregiving</td><td>0.136</td><td><0.001</td><td>0.287</td><td>-</td><td>-</td><td>-</td></tr>
</table>

Comment: β = Beta standardised coefficient; *p* = statistical significance

In addition, the mediation effects of depressiveness, sense of stress, and involvement in caregiving were recalculated for both groups, in the relationship between sense of coherence, perceived social support, and sense of self-efficacy, and sense of life satisfaction. The analysis of these effects in both groups showed that depressiveness, sense of stress, and involvement in caregiving were not significant mediators between the aforementioned variables in either group of carers. The results are presented in Table 8. The coefficients of explained variance in the two tested models are presented in Table 9.

Table 8. **Differences between groups of carers (formal vs informal) in terms of mediation estimates**

Formal carers	**β**	**Sense of coherence**	**Perceived social support**	**Sense of self-efficacy**
	Sense of life satisfaction	0.09	0.15	-0.02
	p	Sense of coherence	Perceived social support	Sense of self-efficacy
	Sense of life satisfaction	0.250	0.133	0.456
Informal carers	**β**	**Sense of coherence**	**Perceived social support**	**Sense of self-efficacy**
	Sense of life satisfaction	0.04	-0.10	-0.05
	p	Sense of coherence	Perceived social support	Sense of self-efficacy
	Sense of life satisfaction	0.392	0.245	0.348

Comment: β = Beta standardised coefficient; *p* = statistical significance

Table 9. **Explained variance in the dimensions of involvement in caregiving, depressiveness and sense of stress, as well as life satisfaction in both groups of carers (formal vs informal)**

Group	**Measurement**	R^2	ΔR^2	Q^2
Formal carers	Sense of life satisfaction	0.54	0.48	0.57
	Depressiveness	0.26	0.21	0.26
	Sense of stress	0.41	0.38	0.42
	Involvement in caregiving	0.37	0.33	0.38
Informal carers	Sense of life satisfaction	0.48	0.41	0.49
	Depressiveness	0.47	0.43	0.47
	Sense of stress	0.38	0.33	0.38
	Involvement in caregiving	0.17	0.12	0.18

Comments: R^2 = coefficient of explained variance; ΔR^2 = adjusted ΔR^2; Q^2 = non-parametric equivalent of R^2

Discussion of results

The situation of carers of people with Alzheimer's disease is currently a focus of interest for many researchers. Most studies point to the negative consequences of caregiving, including a decline in life satisfaction among carers as a result of considerable burden and a growing sense of fatigue. This situation calls for research into factors that may be important for improving the functioning of carers, lowering their levels of burden, and improving their quality of life. The overarching aim of this dissertation is to consider the personal resources of carers as factors that are relevant to shaping life satisfaction levels.

Summarising the results, it can be concluded that there is no direct correlation between age, sex, duration of care, stage of illness, and life satisfaction. According to this study, a higher level of education, less time spent on caregiving per week, and fewer sources of assistance used by the care recipient are factors contributing to an increased sense of life satisfaction. Proper education can promote a better understanding of one's own situation and may be associated with a higher level of social competence, which favours independence and greater autonomy in decision-making. The higher life satisfaction of carers with higher education may result from a greater ability to interpret, evaluate, and reflect on their own attitudes towards other people and the surrounding world [23], and thus a better understanding of themselves and their caregiving role. As reported to date, a low educational level is a factor that is associated with increased depressive symptoms and care burden [24], and has also been linked to a greater sense of loneliness among carers [25]. It is possible that the relationship between education and life satisfaction is also mediated by other variables.

It has been found in this study that when the care recipient is assisted only by the main carer, the level of life satisfaction among carers is higher. These findings are difficult to compare with existing studies. They may, however, indicate a higher sense of life satisfaction among carers due to them crediting themselves with the benefits of their caregiving role. Providing care independently may contribute to a greater sense of meaning and value in their own lives. Existing research has demonstrated that the duration of daily care is one of the predictors for perceived care burden and the emergence of depressive symptoms in carers [26]. Providing care for a sick person involves a significant limitation of time for oneself and a considerable sense of burden, leading to feelings of helplessness, uncertainty, and anxiety [27]. The results indicate that as the time spent caring for the sick person increases, the sense of life satisfaction decreases, which may be associated with a greater sense of burden, increased sense of helplessness, and reduced coping capacity. As other studies have shown, the development of depression and other health problems contributes to a reduced quality of life for carers [28]. This correlation is particularly evident in older carers and tends to become stronger with the duration of caregiving [29]. Some studies report that younger carers manifest less satisfaction with their role [30]. This may be associated with the type of the relationship between the carer and the care recipient.

The results of the study support the hypothesis that there is a correlation between personal resources and the sense of life satisfaction. Increased levels of personal resources, sense of coherence, self-efficacy, and perceived social support were associated with higher levels of satisfaction. The present study supports the conclusion that personal resources are an important predictor of the level of life satisfaction of carers of people with Alzheimer's disease. Existing reports suggest that carers who exhibit a low sense of coherence experience more stress [31], are more burdened by their caregiving [32], and manifest more depressive symptoms [33]. There is a similar correlation between social support and sense of self-efficacy. A high level of perceived social support results in reduced levels of tension, anxiety [34], and depression [35], and leads to increased self-esteem and a higher sense of acceptance from others [36]. Therefore, support plays a major role in reducing emotional stress, which may be instrumental in maintaining the level of quality of life.

A higher sense of self-efficacy among carers is associated with lower levels of stress and depressive symptoms [37] and a lower sense of burden [38]. The sense of self-efficacy, which refers to the belief that one has the capacity to cope with care-related difficulties, can produce a sense of greater control over the situation and inspire a stronger motivation to act. As conceptualised by salutogenesis, a high sense of coherence is associated with an increased sense of control over events, a better understanding of the caregiving situation in a coherent, predictable, and orderly manner, and an increased belief in the meaningfulness and purposefulness of the individual's efforts [39]. Personal resources thus play an important role in reducing the burden and maintaining appropriate levels of life satisfaction. Despite the substantial burden felt by carers, they experience a sense of satisfaction resulting from the expression of gratitude by the care recipient, which reinforces the belief that they are the most important person to the care recipient [40].

The results of the study also support the hypothesis that the care burden explains the mechanism underlying life satisfaction. A considerable care burden, characterised by a higher number of depressive symptoms and a greater sense of stress among carers, was associated with a decrease in life satisfaction. Carers who reported high levels of sense of coherence exhibited a lower sense of burden resulting from caregiving, and their sense of life satisfaction was higher. Studies of carers' psychological well-being have revealed that those reporting poor well-being had a lower subjective self-assessment of their health, and their care recipients exhibited poorer functioning, experienced a feeling of being misunderstood by their relatives, felt bitter, and had increased levels of anxiety and a sense of isolation [41].

Eriksson and Lindström's review of studies [42] points to both a direct impact of sense of coherence on quality of life and an indirect impact on subjective health assessment. Our own research suggests that an increase in perceived social support is associated with a decrease in stress levels among carers and an increase in life satisfaction. In turn, an increased sense of self-efficacy is correlated with greater involvement in caregiving. Existing research demonstrates that both a sense of self-efficacy and social support contribute significantly to higher levels of carers' well-being and quality of life [43], as well as to increased general well-being [19]. Studies indicate that carers reporting a low level of quality of life primarily report a lack of support in the emotional domain [44].

The burden placed on the carer results in increasing social isolation, abandonment of previous activities, and full concentration on the care recipient, which may involve the risk of loss of resources and a decline in quality of life. Our own research reveals that depressiveness among carers and high levels of perceived stress reduce life satisfaction. Proper management of the resources available to carers may protect against the negative consequences associated with the caregiving role. Despite the substantial burden, high levels of sense of coherence, sense of self-efficacy, and the belief that support is available constitute an important psychological construct for maintaining an adequate level of quality of life.

Dividing the sample into formal and informal carers, the following results were obtained. In the group of informal carers, an increase in perceived social support leads to a decrease in involvement in caregiving, while in the group of formal carers, it is associated with an increase in involvement. The literature mostly focuses on the positive aspects of support, i.e. mobilisation of an individual's potential, improvement of personal competence, and an increased sense of satisfaction and well-being. Support can also contribute to the impairment of an individual's competence by reducing their level of self-efficacy in coping with difficulties [45]. The results may indicate that the support received by family carers allows them to reduce their personal involvement in caregiving, while formal carers, when receiving additional support, may become more engaged in their work, thus improving their competence. Research also indicates that an increased sense of self-efficacy is more strongly associated with an increased sense of life satisfaction among formal carers than among informal carers. Previous research indicates that a high sense of self-efficacy contributes to reduced levels of perceived stress and depressive symptoms, which may be associated with a higher sense of life satisfaction [37]. A belief in one's ability to cope with the challenges of caregiving, expressed as greater confidence in one's own competence and stronger motivation to act, is more strongly associated with life satisfaction among professional carers. This may be related to the fact that professional carers perform caregiving roles by choice, whereas family carers are often compelled to take on the responsibility of providing care for a sick relative.

The results of the study did not confirm the hypothesis that care burden mediates the relationship between personal resources and life satisfaction. Most existing research focuses on variables that mediate between stress resulting from caregiving and its negative consequences. There are no reports on the role of variables mediating the relationship between carers' personal resources and their life satisfaction. The results of this study highlight the importance of resources available to carers in building their sense of life satisfaction and in reducing the sense of burden. Providing long-term care entails a significant burden on carers, but the resources they possess may serve as an essential protective factor against the loss of life satisfaction. The present study, despite some limitations, offers a new approach to the existing body of knowledge on carers' life satisfaction, grounded in the role of personal resources, and may serve as a source of inspiration for further research in this area.

Conclusions

1. A higher level of education, fewer hours spent on caregiving per week, and fewer sources of assistance used by the care recipient are factors contributing to an increased sense of life satisfaction.
2. Increased levels of personal resources, sense of coherence, self-efficacy and perceived social support are associated with greater life satisfaction.
3. A considerable care burden, characterised by a higher number of depressive symptoms and increased stress among carers, is associated with a decrease in life satisfaction.
4. A high level of personal resources is an important psychological construct for maintaining an adequate quality of life.
5. Higher levels of perceived social support are associated with decreased caregiving involvement among informal carers and increased involvement among formal carers.
6. An increase in sense of self-efficacy is more strongly associated with greater life satisfaction among formal than informal carers.
7. The results of the study indicate that psychological support based on strengthening the personal resources of carers may serve as an essential protective factor against the loss of life satisfaction.

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