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Reliability and Validity of the COPE Index among Caregivers of Disabled People

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Reliability and Validity of the COPE Index among Caregivers of Disabled People

Abstract

Aim: To study the reliability and validity of the Carers of Older People in Europe (COPE) Index among caregivers of disabled people of different ages.

Methods: A cross-sectional design of Finnish caregivers (n=1 117). Exploratory factor analysis (EFA) was performed separately on samples of three different age groups, and the internal consistencies of the subscales were investigated.

Results: Three factors were identified; Cronbach's alpha was .83-.86 for negative impact and .77-.78 for quality of support, indicating good internal consistency. The third factor, positive value, was less consistent across the age groups ($\alpha < .66$).

Conclusions: The COPE Index is a valid and reliable screening tool to measure negative impact and quality of support of caregivers of disabled people. Further research is needed to develop the COPE Index to more precisely measure positive value of the caregiving process.

Keywords: Caregiver, Cross-Sectional Studies, Factor Analysis, Reliability, Validity

Highlights

- COPE Index proved to be a valid and reliable tool among caregivers of disabled people of different ages
- Clinicians can identify negative impact of caregiving regardless of age of care recipients
- Further research is needed to precisely detect positive value of caregiving

1. Introduction

Informal caregivers' helping hands enable many disabled persons to live in their homes rather than in an institution, and increasing importance of this assistance is evident due to the aging population and limited resources of welfare societies in Western countries. For example, it has been estimated that 6.4 percent of whole population in Finland serve as family caregivers (Vilkko, Muuri, Saarikalle, Noro, & Finne-Soveri, 2014) - but not, however, without personal cost. Several population-based studies have revealed that the caregiving process can have a negative impact (Kim & Schulz, 2008; Pinquart & Sorensen, 2007), including depressive symptoms, anxiety or distress as outcome measures of mental health (Mohamed, Rosenbeck, Lyketsos, & Schneider, 2010; Smith et al., 2014). Moreover, the burden of caregiving is associated with cardiovascular illness (Haley, Roth, Howard, & Safford, 2010; Ji, Zoller, Sundquist, & Sundquist, 2012; Mausbach, Patterson, Rabinowitz, Grant, & Schulz, 2007; von Kanel et al., 2008).

Caregiving stress is an outcome of a process which comprises caregiver's background characteristics, primary and secondary stressors, and mediators of stress (Pearlin, Mullan, Semple, & Skaff, 1990). Risk factors for higher stress in a caregiver's background are female gender, low education and cohabitation with the care recipient (Adelman, Tmanova, Delgado, Dion, & Lachs, 2014). In particular, multiple caregiving tasks and extended amounts of time spent on caregiving, and challenges caused by the behaviour of the recipient seem to stress caregivers (Savundranayagam, V., & Kosloski, 2011). On the other hand, higher personal mastery (van der Lee, Bakker, Duivenvoorden, & Dröes, 2014), social support (Rodakowski, Skidmore, Rogers, & Schulz, 2012) as well as increased use of positive coping strategies (Harmell, Chattillion, Roepke, & Mausbach,

2011) have a protective effect on health outcomes whereas the use of avoidance coping strategies is associated with higher caregiver strain (del-Pino-Casado, Frías-Osuna, Palomino-Moral, & Pancorbo-Hidalgo, 2011).

Similarly, parents who are caring for children with disabilities experience a great level of stress (Hayes & Watson, 2013; Lee, 2013; Pousada et al., 2013), attributable to various causes, such as behavioural problems and the disability level of the care recipient, ineffective coping strategies, family functioning and poor social support (Isa et al., 2016; Plant & Sanders, 2007). These findings are comparable with those reported by caregivers of older adults and with the outcomes of parental stress processes, which also lead to psychological and physical health problems (Isa et al., 2016; Murphy, Christian, Caplin, & Young, 2007). In fact, the main differences in between findings on caregivers of children with disabilities and those on caregivers of persons in other age groups derive more from the concepts used by different researchers than from the actual effects on carers of caregiving. Since the factors of caregiver strain seem to be similar across the different age groups of care recipients, it might be possible and useful for the clinicians to use the same measurement to identify strain with caregivers regardless of whom they care for. This screening can enable to find those who can most benefit of supportive interventions. Accordingly, it can help planning carefully focused and better targeted new clinical interventions.

Caregiving research has been criticized for focusing mainly on the negative effects of caregiving with the result that the positive aspects have been either neglected or underreported (Nolan, Grant, & Keady, 1996; O'Reilly, Connolly, Rosato, & Patterson, 2008; Roth, Fredman, & Haley, 2015). One stressed caregiver may leave him-/herself out of caregiving if not knowing about form of support such as possibility to have a break from caregiving. Moreover, there are positive aspects in caregiving such as an improved

relationship with the care recipient, the feeling of appreciation, and a perception of personal satisfaction (Li & Loke, 2013; Nolan et al., 1996). The various tools that have been developed to assess the impact of caregiving, have mostly been confined to the negative rather than both negative and positive aspects of caregiving (Van Durme, Macq, Jeanmart, & Gobert, 2012; Whalen & Buchholz, 2009). Of these instruments, the most studied and clinically used is the Zarit Burden Inventory, which mainly evaluates caregiver strain and was developed for caregivers of persons with dementia (Van Durme et al., 2012).

One of the multidimensional scales identified by Whalen and Buchholz (2009) is the COPE Index (Caregivers of Older People in Europe Index). It was developed in collaboration with several European countries as a brief first-stage assessment tool to identify caregivers who may need supportive interventions of any kind (Balducci et al., 2008; McKee et al., 2003). In the COPE Index, a caregiver is seen as a partner and expert rather than a resource, and this holistic view of caregiving includes both perceived positive and negative aspects of caregiving in light of existing support (Nolan & Philp, 1999). Highlighting positive aspects of caregiving can give experiences of empowerment for caregivers, and pointing out negative impacts can help targeting their supportive actions more accurately. To date, Cope Index has been utilized as part of social and health care services among caregivers of elderly people. In addition, it has been utilized among caregivers of other than elderly care recipients (Jönsson, Wijk, Danielson, & Skärsäter, 2011; Salminen, Hämäläinen, Karhula, Kanelisto, & Ruutiainen, 2014). However, the validity and reliability of the scale among caregivers of disabled people at different age have not been investigated.

The aim of this study is to investigate and compare the validity and reliability of the Finnish version of the COPE Index among caregivers of care recipients in different age groups.

2. Methods

2.1 Study design and participants

This study is a part of a large cross-sectional research project, the Caregiver Research Project of the Social Insurance Institution of Finland (Tillman, Kallioma-Puha, & Mikkola, 2014). Ethical approval for the research project was obtained from the research department of the Social Insurance Institution of Finland. The population studied, the caregivers, was defined utilizing the administrative data of income taxes. In detail, people, who had received the caregiver's allowance in 2012 and lived in mainland in Finland at the end of 2012, belonged to the studied population. However, people, who had died, lived abroad or were in institutional care at the time of the sample was drawn, were excluded. The size of the population was 40 591 caregivers. A simple random sample of 4000 caregivers was drawn from the population in the spring of 2014. The 80-item questionnaire was mailed via the Finnish postal service in May and June 2014. The response rate was 59.7% (n=2 388). The missing value analysis, adjusted for gender, region and age, showed that those who answered were slightly more likely over 60 years of age than those did not participate in the inquiry. Only those (n= 1 343) who were still caregivers at the data collection point were included. Participants for whom any of the data from the 15-item COPE Index scale or care recipient's age was missing were excluded. After exclusions, 1 117 participants were included in the exploratory factor analysis. The mean age of the caregivers and care recipients were higher ($p<.001$) in the excluded data than in the included data, and consequently the excluded participants included a larger proportion of spousal caregivers ($p<.001$). However, no gender ($p=.402$), hours of caregiving ($p=.102$) or duration of caregiving ($p=.264$) differences were observed between the excluded and included participants.

2.2 Measures

From the 80-item questionnaire were included for the purposes of this study 15-item COPE Index, which consists of three subscales for caregiving: negative impact (seven items: Do you find caregiving too demanding? Does caregiving cause difficulties in your relationships with friends?, Does caregiving have a negative effect on your physical health?, Does caregiving cause difficulties in your relationship with your family? Does caregiving cause you financial difficulties?, Do you feel trapped in your role as a caregiver?, and Does caregiving have a negative effect on your emotional wellbeing?), positive value (four items: Do you feel you cope well as a caregiver?, Do you find caregiving worthwhile?, Do you have a good relationship with the person you care for?, and Do you feel that anyone appreciates you as a caregiver?) and quality of support (four items: Do you feel well supported by your friends and / or neighbours?, Do you feel well supported by your family?, Do you feel well supported by health and social services? Overall, and Do you feel well supported in your role of caregiver?). In addition we included questions on the caregiving arrangement and the caregiver/care recipient characteristics (the caregiver's gender, relationship to the care recipient, cohabitation with the recipient, the age of the caregiver and care-recipient, the caregiver's occupational status, length of time in the caregiving measured in years, and hours of caregiving per day).

A validation study of the 15-item version of the COPE Index among nearly 6 000 caregivers of elderly people from six European countries (Germany, Greece, Italy, Poland, Sweden and United Kingdom) revealed three subscales for caregiving with internal consistencies (Cronbach's α) varying from .64 to .83 (Balducci et al., 2008). Statistically significant correlations between the COPE Index subscales, especially negative impact, and criterion measurements have been as expected and have provided evidence on criterion validity (Balducci et al., 2008; Roud, Keeling, & Sainsbury, 2006). The COPE

Index has been translated into Finnish, reviewed and translated back into English according to the protocol (Sousa & Rojjanasrirat, 2011). It has been piloted with the caregivers of disabled adults (n=63) and published in 2011 in Finnish (Juntunen & Salminen, 2011).

2.3 Data analysis

The data were divided into three subgroups based on care recipients' age: a) care recipients aged 65 years or over (COA); b) care recipients aged over 18 and less than 65 (CA); and c) care recipients aged 18 years or under (CY). For the analysis, the negative impact subscale was reversed, so that higher score indicates a higher positive experience of caregiving. This made it possible to investigate the internal consistency of the entire scale. Exploratory factor analysis (EFA) was used to explore whether the three-factor structure is replicable in the datasets of the different caregiver groups. The analyses were completed using Mplus software version 6 (Muthén & Muthén, 1998-2010). Goodness of Fit (GF) was evaluated using the root mean square error of approximation (RMSEA), the standardized root mean square residual (SRMR), and comparative fit index (CFI) based on the recommendation of Bentler (2007). It is recommended that the RMSEA would be no greater than .06, the SRMR less than .08 and the CFI value close to .95 or greater (Hu & Bentler, 1999). In the first phase of the analysis EFA with Geomin (oblique) rotation was used to examine the scale factoring based on the 15 categorical items in each subgroup. One item (Does caregiving cause you financial difficulties?) was excluded from further analyses due to its low loading in all three subgroups, and its distorting impact on the factor structure in group CY. In all the factor analyses, a factor was retained if its eigenvalue was greater than one. Cronbach's alpha was used to assess the internal consistency of the factored subscales and the entire instrument, and was estimated in

SPSS (version 20). Nunnally (1978) has suggested that score reliability of .70 or better is acceptable when used in the early stages of research.

Insert Table 1 about here

3. Results

3.1 Descriptive analyses

The sociodemographic characteristics of the participants are presented in Table 1. The largest group of the caregivers was older adult caregivers, COA (n=716). The average age of a caregiver in COA group was 71 years and 68% were women. Most COA (76%) helped their spouses, and most (76%) were retired from work. Nearly 70% of them were involved in caregiving for more than 12 hours a day. The next largest group (n=235) were adult caregivers, CA. Their mean age was 61 years and 72% were women. Most CA (61%) were either mothers or fathers of care recipients, 33% were at work or studying, and 41% were retired. In this group of caregivers, 60% provided care for more than 12 hours a day. The caregivers (n=166) of the youngest care recipients (CY) were aged 44 on average and 153 (92%) were women. The CY group were all parents or foster parents and two-thirds of them were either at work or studying. Most (77%) were involved in caregiving for more than twelve hours a day.

Insert Table 2 about here

Participants' responses to the 15-items COPE Index are presented by subgroups in Table 2. Most of the caregivers (64%-75%) experienced that they always had good relationship with the care recipient, and most caregivers of the care recipients aged 18 or less years

(66%) felt always caregiving worthwhile as well. The distribution of answers to this question differed most in the subgroups because 47% of the caregivers in the COA and 50% in the CA group felt caregiving always worthwhile. Support from friends or neighbours was little received since 21 to 27% answered that they were never received support from friends or neighbours) and nearly as unusual was to be well supported by governmental health and social services (14 to 25% answered that they never received support from the aforementioned). In the all subgroups, most often caregiving caused difficulties on their relationships with friends; 40% of caregivers in COA, 32% in CA, and 35% in CY group answered always or often to this question.

Insert Table 3 about here

3.2 Scale factoring of the COPE Index

In the final analysis we identified three factors, for each of which the eigenvalue was at least 1.0, explaining 63-65% of the total variance (Table 3). The 3-factor solutions provided good model fit according to criteria; RMSEA was .056, (90% CI =.048-.065), CFI was .983 and SRMR was .028 for COA. For data set of CA GFI; RMSEA was .056, (90% CI =.037-.073), CFI was .983 and SRMR was .039, and for data set of CY; RMSEA was .045, (90% CI =.009-.070), CFI was .990 and SRMR was .035. The first factor was called “negative impact” and it explained 39-43% of the total variance. For the data sets of COA and CY this factor had highest loadings on six items: “Does caregiving cause difficulties in your relationships with friends?”, “Does caregiving have a negative effect on your physical health?”, “Does caregiving have a negative effect on your emotional wellbeing?”, “Do you feel trapped in your role as a caregiver?”, “Do you find caregiving too demanding?” and “Does caregiving cause difficulties in your relationship with your family?”. The first factor

for the CA data set included an additional seventh item: “Do you feel you cope well as a caregiver?” (Table 4)

Insert Table 4 about here

The second factor (13.9-14.6% variance) “quality of support” comprised the same five items in all three data sets, COA, CA and CY: “Do you feel well supported by your family?”, “Do you feel well supported by your friends and / or neighbours?”, “Overall, do you feel well supported in your role of caregiver?”, “Do you feel that anyone appreciates you as a caregiver?” and “Do you feel well supported by health and social services?”. In the youngest (CY) and the oldest age (COA) data sets, the third factor (8.0-9.7% variance), named “positive value”, contained three items: “Do you have a good relationship with the person you care for?”, “Do you find caregiving worthwhile?” and “Do you feel you cope well as a caregiver?”; and in the middle age (CA) data set only the first two items.

3.3 Internal consistency of the COPE Index

Internal consistency was established by calculating the Cronbach alpha coefficient for all three subscales and the entire scale and for all subgroups separately (Table 4).

Coefficients of .83-.86 for the negative impact items indicated good internal consistency in each of the three age groups and values of .77-.78 acceptable internal consistency for the quality of support items (Cronbach α). Internal consistency for the positive value subscale was low among all the care recipient groups (Cronbach α was .57 for CY, .59 for CA, and .66 for COA). Coefficients of .83-.86 for the items comprising the entire scale indicated that the COPE Index had good overall internal consistency.

4. Discussion

The COPE Index was developed as a first-stage screening instrument for identifying need for support among caregivers of older adults (Nolan & Philp, 1999). In this study, we tested the validity and the reliability of the Finnish version among not only caregivers of older adults, but also of middle-aged and young care recipients. All the participants reported giving their care recipient demanding care for at least one and half years.

In all three data sets, three factors emerged for the 14 item COPE Index. In the oldest and youngest care recipients, six items, and in the middle age recipients seven items, loaded on the first factor, which we named “negative impact”. The latter group was heterogeneous, including both parental (61%) and spousal (32%) caregivers and their caregiving had extended over a longer period ($M=14.6$ y.) than in the other two groups ($M=6.1$ y. and 6.8 y.). We conducted further factor analysis in the middle-age group separately for the parental and the spousal caregivers and found that seven items loaded on the first factor only among the parental caregivers. The “extra” item was “Do you feel you cope well as a caregiver?” while in the other two groups it loaded on the third factor “Positive value”. The aging family caregivers of adult daughter or son with intellectual disabilities may have poor emergency or future planning and lack of appropriate services (Ryan, Taggart, Truesdale-Kennedy, & Slevin, 2014). For example, respite services are more often an older people’s residential facilities (Taggart, Truesdale-Kennedy, Ryan, & McConkey, 2012). This can undermine confidence to cope as a caregiver. Moreover, further research is needed to explain the difference in the results for the parental caregivers of adults.

Five items loaded on the factor of quality of life in all three data sets. In a previous analysis of a large European data set, the item “Do you feel that anyone appreciates you as a

caregiver?" loaded on the "Positive value" factor, except in the Swedish and Italian caregiver data, where it loaded on "quality of support" (Balducci et al., 2008). A similar loading pattern was found in a study of Finnish caregivers which used earlier Finnish version of the questionnaire (Toljamo, Perälä, & Laukkala, 2012). This difference may be related to cross-country cultural differences. Only three items in the COA and CY data sets and two items in the CA data set loaded on the third factor.

The values of the Cronbach's alpha coefficient were acceptable for the entire scale, and for the negative impact and quality of support subscales in all three data sets (Cronbach's $\alpha > .70$). The internal consistency of the quality of support scale was also acceptable without the fifth item, which in previous research has been found to load on the positive value component (Balducci et al., 2008). The internal consistency of the positive value scale was low with Cronbach's α ranging from .57 to .66. It would be important to improve the positive aspect subscale to be able to identify caregivers who may have difficulties in their relationship with a care recipient or in coping with working as a caregiver. The first improvement would be to reformulate questions related to positive value. The COPE index is intended to be used as a first-stage assessment tool that is short and easy to complete (McKee et al., 2003). However, we found that one of the subscales, the "positive value" subscale, may be too diverse a concept to be considered unidimensional. Tarlow et al. (2004) developed nine-item scales to measure positive aspects in Alzheimer's caregiving and found two factors: "affirmation" and "outlook on life". Al-Janabi et al. (2010) included five items on positive aspects in the Caregiver Strain Index and these items also loaded on two factors, "coping" and "attitudinal". Moreover, the addition of the positive items improved the convergent validity of the measure (Al-Janabi et al., 2010). Another way to improve positive value subscale of COPE Index is to separate theoretically different concepts of positive aspect to own subscales and after formulating, it is recommended to

use e.g. confirmatory factor analysis to reject the measurement theory. As a clinical implication, detection of positive aspects of caregiving reliably in future would enable, for example, organising peer-supportive meetings for caregivers and highlighting positive aspects of caregiving to give them experience of empowerment and thus enable them to keep going on their demanding task of caregiving.

The item “Does caregiving cause you financial difficulties?” in the 15-item version of the COPE Index did not fit into three-factor model of CY and CA data sets. In the COA data set, this item loaded on the negative Impact factor, but did not improve the internal consistency reliability of this factor, and thus we decided to conduct the analysis without this item. Previous findings indicate that parental caregivers of a child or an adult with disabilities have lower incomes than parents of healthy children (Earle & Heymann, 2012; Seltzer, Floyd, Song, Greenberg, & Hong, 2011), which may be due to a diminished possibility for them to work owing to the time and effort that caregiving demands. The parents of a child with special needs have reported also work loss as a result of their child’s health care needs (Okumura, Van Cleave, Gnanasekaran, & Houtrow, 2009). However, lower income is not necessarily associated with physical or psychological caregiver strain. There is evidence to suggest that non-working caregivers experience less stress than working caregivers (Oldenkamp et al., 2014) and the positions of both caregiver and fulltime worker may cause role strain (Wang, Shyu, Chen, & Yang, 2011). However, combining work and family care is not necessarily strenuous, since working caregivers may have higher quality of life (Oldenkamp et al., 2014) or fewer psychological problems (Einam & Cuskelly, 2002). It is important to evaluate the financial difficulties working-age caregivers at separately so as not to underestimate or ignore possible difficulties.

5. Limitations of the study

This population-based study is a randomized sample of 40 500 Finnish registered caregivers and thus is representative of caregivers who provide intensive care to disabled people. The response rate was satisfying (59.7%), but caregivers aged 60 years or older were more active to participate than younger participants. On the other hand older caregivers were more often excluded from factor analysis because of missing values than younger caregivers. Even though our results do not represent all caregivers, it is important to examine the reliability of the COPE Index among other caregivers than that of older people, since it is also used as an assessment tool with caregivers of younger care recipients.

Another limitation of this study is the lack of gold-standard criterion validity measures; however, a previous study has provided evidence among European caregivers that the negative impact subscale has strong associations with psychological well-being and quality of life (Balducci et al., 2008). The subscale structure of the COPE index varied slightly across the different age groups. In particular, the parental caregivers of adult care recipients differed from the other caregivers with respect to the positive experiences of care-giving. This phenomenon needs further investigation.

6. Conclusions

Our result suggest that the Finnish version of COPE Index is a valid, first-stage assessment tool, which is quick to complete and reliably measures perceived negative impact and quality of support of caregivers providing care to recipients of different ages. This provides clinicians identify possible risks of caregiving regardless of age and status of care recipients. However, improvement of the internal consistency of the positive value subscale is recommended to be able to identify different levels of satisfaction experienced by caregivers in the caregiving role.

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Table 1. Characteristics of Caregivers to Care Recipients (CR) in Different Age Groups

Variable	CR≥65 n=716	CR>18 and <65 years n= 235	CR≤18 years n=166
Caregiver age, Mean (SD)	71.1 (10.5)	60.8 (11.1)	43.7 (8.0)
Caregiver gender n (%)			
Male	230 (32.4)	64 (27.7)	13 (7.8)
Female	480 (67.6)	167 (72.3)	153 (92.2)
Occupational status n (%)			
Fulltime work	55 (7.7)	48 (20.6)	76 (46.3)
Part time work	22 (3.1)	26 (11.1)	27 (16.5)
Home parent	0	7 (3.0)	23 (14.0)
Student	1 (0.1)	2 (0.9)	5 (3.0)
Retired	539 (75.6)	96 (41.2)	4 (2.4)
Other nonworking	96 (13.5)	54 (23.2)	29 (17.7)
Years of education, Mean (SD)	10.5 (3.8)	11.6 (3.5)	15.1 (3.8)
Relationship to Care Recipient n (%)			
Spouse	542 (76.2)	75 (32.3)	0
Parent	1 (0.1)	141 (60.8)	162 (98.2)
Child/children-in-law	145 (20.4)	7 (3.0)	0
Other	23 (3.2)	9 (3.9)	3 (1.2)
Cohabitation n (%)			
Living within same building	658 (92.2)	215 (94.5)	164 (98.8)
Living different buildings	56 (7.8)	13 (5.5)	2 (1.2)
Years of caregiving, Mean (SD)	6.1 (4.7)	14.6 (13.2)	6.8 (4.0)
Age of Care Recipient, Mean (SD)	79.7 (7.7)	43,2 (15.1)	11.6 (4.0)
Hours of caregiving/24h n (%)			
0-2 h	19 (2.7)	4 (1.7)	2 (1.2)
3-4 h	48 (6.8)	20 (8.6)	3 (1.8)
5-6 h	40 (5.7)	26 (11.2)	9 (5.5)
7-12 h	115 (16.3)	44 (18.9)	24 (14.5)
13-24 h	485 (68.6)	139 (59.7)	127 (77.0)

Table 2. Responses of Caregivers to Care Recipients (CR) in Different Age Groups

Items	Response categories %											
	CR ≥ 65				CR >18 and <60				CR ≤ 18			
	1	2	3	4	1	2	3	4	1	2	3	4
1 Do you feel you cope well as a caregiver?	1	18	56	24	-	9	61	30	-	15	60	24
2 Do you find caregiving too demanding? ¹	7	24	55	14	4	17	59	20	2	14	58	26
3 Does caregiving cause difficulties in your relationships with friends? ¹	12	28	41	19	8	24	48	20	10	25	44	21
4 Does caregiving have a negative effect on your physical health? ¹	6	25	52	17	2	14	55	29	6	16	46	32
5 Does caregiving cause difficulties in your relationship with your family? ¹	2	12	39	47	2	13	42	44	3	21	43	33
6 Does caregiving cause you financial difficulties? ¹	2	8	43	47	3	8	41	48	9	18	36	37
7 Do you feel trapped in your role as a caregiver? ¹	12	21	47	20	7	19	45	29	6	11	49	34
8 Do you feel well supported by your friends and / or neighbours?	21	44	26	9	27	45	22	6	21	46	26	6
9 Do you find caregiving worthwhile?	3	16	34	47	2	11	36	50	2	5	27	66
10 Do you feel well supported by your family?	11	27	33	29	12	28	30	30	7	24	35	34
11 Do you have a good relationship with the person you care for?	-	6	30	64	-	3	22	75	-	2	23	75
12 Do you feel well supported by health and social services?	18	34	34	14	25	37	29	10	14	50	30	6
13 Do you feel that anyone appreciates you as a caregiver?	11	33	36	20	18	38	29	15	28	38	24	10
14 Does caregiving have a negative effect on your emotional wellbeing? ¹	5	19	51	25	1	11	52	36	2	9	46	43
15 Overall, do you feel well supported in your role of caregiver?	11	48	33	9	18	46	26	10	13	51	30	6

¹Inverse scale: 1=Always, 2=Often, 3=Sometimes, 4=Never

Table 3. Eigenvalues for Samples Correlation Matrix and % for variance

Samples	Factors (% for variance)				
	1	2	3	4	5
CR \geq 65	5.71 (40.8)	2.00 (14.3)	1.13 (8.1)	0.76 (5.4)	0.67 (4.8)
CR $>$ 18 & $<$ 65	5.50 (39.3)	2.04 (14.6)	1.36 (9.7)	0.81 (5.8)	0.76 (5.4)
CR \leq 18	6.05 (43.2)	1.95 (13.9)	1.12 (8.0)	0.81 (5.8)	0.64 (4.6)

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Table 4. Geomin Rotated Loadings for Three Factors Solution

Items	CR ≥65				CR 18 < and <65				CR ≤18			
	1	2	3	ERV	1	2	3	ERV	1	2	3	ERV
3 Does caregiving cause difficulties in your relationships with friends?	.83	.09	-	.32	.76	-	.01	.44	.74	.18	-	.31
4 Does caregiving have a negative effect on your physical health?	.79	.01	-	.36	.88	.00	-	.29	.84	-	.34	.31
14 Does caregiving have a negative effect on your emotional wellbeing?	.74	-	.27	.27	.80	-	.10	.29	.64	.03	.32	.32
7 Do you feel trapped in your role as a caregiver?	.71	.00	.18	.35	.73	-	-	.48	.64	-	.29	.38
2 Do you find caregiving too demanding?	.63	-	.07	.58	.65	-	-	.63	.70	-	.18	.49
5 Does caregiving cause difficulties in your relationship with your family?	.56	.07	.18	.52	.66	.14	.05	.42	.61	.19	.19	.34

10 Do you feel well supported by your family?	.00	.79	.20	.56	.09	.54	.05	.61	-	.64	.13	.31
8 Do you feel well supported by your friends and / or neighbours?	.01	.76	-	.46	-	.76	-	.52	.08	.67	-	.31
15 Overall, do you feel well supported in your role of caregiver?	.14	.70	-	.41	-	.86	-	.35	.02	.78	-	.36
13 Do you feel that anyone appreciates you as a caregiver?	-	.67	.09	.55	-	.83	.03	.42	-	.70	.12	.56
12 Do you feel well supported by health and social services?	.00	.58	.04	.64	-	.77	-	.54	.02	.69	-	.56
11 Do you have a good relationship with the person you care for?	-	.01	.81	.35	.01	.08	.78	.31	-	.16	.63	.49
9 Do you find caregiving worthwhile?	.01	.10	.66	.48	.12	-	.69	.46	.23	-	.55	.57
1 Do you feel you cope well as a caregiver?	.14	.14	.46	.61	.48	.04	.23	.61	.17	.14	.57	.48
Cronbach's α , each factor	.85	.77	.66		.84	.78	.59		.86	.77	.57	
Cronbach's α , entire scale			.86			.83				.86		

CR=Care Recipients, ERV = Estimated Residual Variance

Highlights

- COPE Index proved to be a valid and reliable tool among caregivers of disabled people of different ages
- Clinicians can identify negative impact of caregiving regardless of age of care recipients
- Further research is needed to precisely detect positive value of caregiving

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