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The Usability of the COPE Index in a Hungarian Sample: Testing the Reliability and Component Structure of the Three Subscales of the Index

RESEARCH

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ABSTRACT

Context: The COPE Index is a standardised instrument for use as a first assessment of negative impact, positive value, and quality of support among informal carers of older people, validated and available in several languages. However, this instrument has not been tested in a Hungarian sample.

Objectives: The aim of the present study is to translate and adapt the COPE Index for use with Hungarian-speaking informal carers, exploring the Index's component structure and internal consistency.

Method: Following standard translation procedures, a Hungarian version of the Index was included in a questionnaire used in a cross-sectional online survey of carers. Principal component analysis (PCA) was used to examine the component structure of the instrument, followed by an analysis of the internal consistency reliability of the emergent components.

Findings: PCA produced three components from the Index that largely matched those of the original instrument in the case of the full sample; however, in the case of active carers, we could not replicate the same components. Cronbach's α was satisfactory for all subscales derived from the components.

Conclusion: The Index is used in many European countries, and this study has produced a comparable and reliable instrument for use among Hungarian-speaking carers, considering the characteristics of the examined sample.

Limitation: The sample is primarily drawn from Facebook, thus it may not fully represent the characteristics of family caregivers in the population.

Implications: The Index help in examining the impacts of caregiving and the quality of support among Hungarian-speaking carers, which can contribute to developing more appropriate and effective policies to support them.

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INTRODUCTION

Providing quality long-term care in aging societies is an increasing challenge. International comparisons of long-term care systems are difficult due to the differing characteristics of countries (Bettio & Vershchagina, 2012). There are various types of categorisation based on the cost of services to the consumer (Bettio & Verashchagina, 2012), public spending on care and care needs (Damiani et al., 2011), the need for care and the use of informal care and the availability of formal care (Nies et al., 2013), as well as care financing and utilisation (Krause et al., 2014). Hungary is characterised by minimal opportunities to replace family care, as there are few subsidised services available and private care is very expensive (Bettio & Vershchagina, 2012). It has a level of formal care that is somewhat below the European average, with a low tendency to expand capacity, limited provision, few opportunities for new initiatives and difficulties in privatisation (Damiani et al., 2011). Additionally, there is a high level of informal care and medium to low formal care (Nies et al., 2013), high need/demand for informal care and low support for informal carers (Krause et al., 2014).

Informal caregiving (often referred to as 'family caregiving') refers to a range of activities and supports provided to family members or friends who are not self-sufficient (Pearlin et al., 1990). The literature defines a carer as a person who provides care or assistance to a sick person or helps them cope with illness without financial reward (Hileman et al., 1992; Patyán, 2017).

According to all the care system typologies considered above, informal care plays a very significant role in Hungary. Despite this, very little research has been done on Hungarian informal and family carers. For this reason, we considered it important to adapt and validate a measurement instrument in the Hungarian language that would facilitate the analysis of the situation of family carers.

The growing proportion of older people in the population and the gap between life expectancy and health expectancy are increasing the need for long-term care worldwide. The old-age dependency ratio is rising steadily in the European Union – 26.1 in 2010, rising to 32.5 in 2021 – while at the same time the active social stratum providing the resources for care is shrinking. (Eurostat, 2022). Declining resources are increasing the role of family members in caregiving, while changing family structures are considerably reducing family care capacity (Hantrais, 2004; Roberto and Blieszner, 2015).

Observations on carers began as early as the 1960s (Carretero et al., 2009), with the first description of the concept of burden in family members of care recipients with mental illness (Grad & Sainsbury, 1963). For almost 30 years, researchers focused on the negative aspects of caregiving, with mention of positive concepts of caregiving only appearing in the 1990s (Hunt, 2003). Since the turn of the millennium, an increasing number of studies have pointed to the positive aspects of the family caregiving role (e.g., Grossman & Gruenewald, 2017; Meisner & Binnington, 2017; Walker et al., 2016). Negative and positive aspects often appear together in a given care process (Cohen et al., 2002; Kinney et al., 1995; Sanders, 2005; Talkington-boyer and Snyder, 1994).

A number of instruments for measuring carer's burden are available in the literature. The diversity of questionnaires shows the evolution and expansion of the concept, as well as the complexity and diversity of the caregiving situation. The oldest and most widely used is Zarit's et al. (1980) Burden Inventory, which measures the physical, psychological, relational and social consequences of caregiving in the life of the carer. The questionnaire, originally consisting of 29 items, has been produced in both 22- and 12-item versions. The questionnaire examines one dimension: the subjective burden of caregiving. Subsequent studies have shown that it is also important to measure objective burden. Montgomery and colleagues' (1985) instrument already included both dimensions, and subsequently a number of more complex instruments were developed. The Carers of Older People in Europe Index (COPE Index) developed by McKee et al. (2003) is a relatively short, 15-item questionnaire. The authors designed the questionnaire by reviewing the literature and analysing existing measurement instruments. In their literature search, they did not find any instrument that was short and easy to fill in, yet integrated both positive and negative aspects of caregiving (Balducci et al., 2008). The questionnaire is recommended as a first step to map the situation of carers and is specifically designed for carers of older people.

The aim of our research during the first wave of the COVID-19 pandemic in 2020 was to investigate the burden on family members caring for elderly relatives, to explore the relationship between burden and burnout at work, and to analyse how the pandemic impacted the burden of carers. The COPE Index best met our research objective for assessing the situation of carers of elderly family members. Our in-depth interview research among family carers (2015) revealed several aspects that are integrated by the COPE Index: the impact of care on relational dimensions (family, friends), the supportive function of the care system and the positive value of care were important aspects to be further explored. In addition, this questionnaire is simple to use and the psychometric testing of the Index has been carried out in several European countries (Greece, Italy, United Kingdom, Germany, Sweden and Poland – Balducci et al. 2008). For all these reasons we chose this measurement instrument for our research.

The COPE Index has also been used in several countries in empirical studies: in Norway (Moholt et al., 2021) and in Germany (Runte, 2018) it has been used among family carers of people with dementia; in Finland, the measure was used for carers of people with memory impairment (Nauha et al., 2018); in Poland, it has been used to measure the burden of family carers (Śliwka & Pabjańczyk, 2014) and carers of older people with mental and functional difficulties (Deluga et al., 2018); in Sweden, it has been used to measure negative impact of caring on carers of people with multi-morbidity (Krevers et al., 2020) and on young carers (Ali et al., 2015); perception of the caregiving role has been measured in general in the UK (Jones et al., 2014) and in an international study comparing Swedish, German and Italian samples (Barbabella et al., 2016). In Italy, the COPE index has been used among migrant carers (Chiatti et al., 2013).

In our study, we investigate the structural validity of the COPE index and compare our results with those of Balducci et al. (2008). After describing the research methods, we present the sample's demographic characteristics and important data about the care process. We then use principal component analysis (PCA) to examine whether the three subscales of the COPE index are separate across the Hungarian sample, which items belong to each subscale, and how the results compare with those of Balducci et al. (2008). We then use Cronbach's α to test the internal consistency reliability of the subscales.

MATERIAL AND METHODS

The results of this cross-sectional research are based on an online survey conducted between 30 April 2020 and 9 July 2020 with a size of $N = 1004$. The research call was addressed to people who were caring for an elderly relative at the time of the research or had done so in the past. Caring for an elderly relative was the only criterion they had to meet to fill out the questionnaire. The questionnaire could also be completed by people who had already finished their care process. In this case, they were asked to recall their experiences of care. Due to a lack of information about the target population's characteristics, probabilistic sampling was not possible.

A significant part of informal caregivers in Hungary is not registered with the social and health care system or any government-run institution. Thus, accessing family carers through those institutions is limited. Another way to obtain information about whether someone provides care for a family member is by asking them directly.

Respondents could fill out the questionnaire on the internet: it was available on websites, we sent emails on mailing lists, and we used Facebook advertisements. The questionnaire was accessed by 86.2% of respondents ($n = 974$) through Facebook, 7.8% received it on a mailing list, 4.0% in an email from a friend or a family member and 2% found it on a website.

Literature on quantitative methodology contains several examples of using Facebook for survey research when a face-to-face interview is challenging (Schneider & Harknett, 2019). Using Facebook advertisements is a helpful way of recruiting respondents because these can reach a large number of people (Kapp et al., 2013), even among an elusive subpopulation (Brickman Bhutta, 2012). In addition, similar to other types of online surveys, a study showed that a notable advantage of surveys circulated on Facebook is that respondents are more willing to answer sensitive, confidential questions (Gregori & Baltar, 2013).

The questionnaire was filled out by 1004 family carers, and 731 respondents' answers were valid in the case of all 15 COPE items.

The COPE index was used to measure carers' burden with the Hungarian version of the original 15 items. According to the original subscales, we measured the negative effects of care with seven items, the positive values with four, and the quality of support with four.

COPE Index values can be between 1 and 4 (1 – always, 2 – often, 3 – sometimes and 4 – never) where 1 means the most intense impact (intense negative impact, better positive value of care, higher support). Participants were also given the option to select 'not applicable' or to skip questions if they did not wish to answer. 'Not applicable' responses were not scored in the analysis.

The adaptation of the questionnaire was carried out in 2015 with the original authors' permission (Tróbert, 2019). The final Hungarian text was produced by comparing independent translations by three translators, with the agreement of all three translators and by integrating the opinions of several experts (sociologists, mental health professionals), and was translated back into English by a native translator. The 'translated' text has been approved by one of the original authors. The linguistic adequacy and comprehensibility of the questionnaire was tested with 20 participants.

The questionnaire consists of three sub-scales, each of which asks about the frequency of specific experiences of carers. The sub-scales are presented in Table 3.

Respondents could answer 69 questions in the study questionnaire, and the COPE index questions were at the beginning of the questionnaire; respondents received no other questions before answering this. The 69-question questionnaire consisted of the following sections: (1) a measure of burden, Carers of Older People in Europe Index (COPE Index); (2) a measure of burnout – Oldenburg Burnout Inventory (OLBI) – a Hungarian adaptation of both measures, reliability and response structure testing was done on a previous and present research sample; (3) demographic data on the respondents; (4) questions on the person cared for; (5) questions on the care process; (6) questions on the additional workload experienced during COVID-19.

Data was processed using SPSS Statistics 27.0 for Mac. We used PCA to assess if we could determine the same three sub-scales and pattern of components as Balducci et al. (2008). The entire set of items in the COPE Index underwent a PCA with orthogonal rotation (varimax) and Kaiser normalisation after extraction. To ensure the appropriateness of component extraction, we employed the scree test, scrutinised the residual correlation matrix for residuals with $r < 0.05$, and carefully examined the reliability of the extracted components. We established a component loading threshold of 0.40 in the case of PCA. Cronbach's α and PCA were used to measure the reliability and component structure of the indices. Rotation was also performed during PCA using the varimax method. We tested the internal consistency of the three components of the COPE index using Cronbach's α. In the presentation of results, the number of items shown in the tables always represents the number of people who gave a valid answer to the question.

Our research has been approved by the Scientific and Research Ethics Committee of the Hungarian Health Science Council under case number IV/1422-2/2020/EKU.

FINDINGS

DESCRIPTIVE ANALYSES

The characteristics of carers in the sample are presented in Table 1. Half of respondents (49.8%, $n = 985$) were providing care at the time of the survey. The average age of participants was 61.3 years, and most of them

Age (*n* = 978)			
18–40 years	1.2%		
41–50 years	7.7%		
51–60 years	30.7%		
61–70 years	50.9%		
71–85 years	9.5%		
Gender (*n* = 990)		**Cohabitation (*n* = 982)**	
Male	4.1%	Living within the same household	60.0%
Female	95.9%	Living within the same building	6.7%
		Living different buildings	33.3%
Occupational status (*n* = 958)		**Ability to self-care (*n* = 984)**	
Full-time or part-time job	46.6%	Capable of self-care	9.0%
Retired	49.2%	Partially capable of self-care	33.2%
Other nonworking	9.2%	Unable of self-care	57.7%
Place of residence (*n* = 993)		**Frequency of caregiving (*n* = 954)**	
Budapest	15.2%	Every day	90.6%
Town	50.2%	A few times a week	8.2%
Village	34.6%	Once a week	0.9%
		Less than once a week	0.3%
Educational attainment (*n* = 971)		**Time spent with the cared-for (*n* = 988)**	
General (primary) school at most	6.6%	All-day	60.5%
Vocational school	22.5%	Half-day	20.0%
Secondary level with a final examination	37.6%	A few hours	17.1%
Tertiary education	33.4%	One hour	2.3%
Relationship to care recipient (*n* = 977)		**Time since the start of care (*n* = 990)**	
Spouse, life partner	9.7%	At most one year	13.1%
Child	41.2%	More than a year but less than two years	11.7%
Other relatives	44.5%	2–5 years	36.4%
Other	4.6%	6–10 years	20.8%
		Above 10 years	17.9%

Table 1 Characteristics of carers and cared for.

were female (95.9%). Almost half the participants were retired (49.2%) and 46.6% of the carers had full-time or part-time jobs. The proportion of those who were also providing care at the time of the survey and doing so while working (i.e., who indicated that they were both providing care and working at the same time) was 21.3% (n = 985). If only those who were providing care at the time of the survey are considered, the proportion of those who were also working while providing care in the subsample (n = 494) was 47.5%.

The average age of retired people (n = 471) in the sample is 66.5 years, the largest group (73.5%) being aged between 61 and 70 years.

The distribution of respondents by place of residence is similar to the distribution of the Hungarian population. Compared to the Hungarian population, the sample includes a lower proportion of respondents with primary school at most, and a higher proportion with tertiary education (Hungarian Central Statistical Office, 2023). The most sizeable group of respondents was those who cared for their parents (44.5%). Sixty percent of respondents lived in the same household as the people they cared for. The majority (90.6%) took care of their elderly family member daily, 60.5% performed caring tasks all day. It is notable that 55.7% of respondents took care of someone unable to self-care at all.

Responses to COPE Index items indicate that at least 48.3% of participants had always or often experienced difficulties or negative effects related to the care tasks. In addition, at least 68.0% sometimes or never felt supported by family and friends, by health and social care services, and overall in the role of caregiving (Table 2).

RELIABILITY AND COMPONENT STRUCTURE OF THE COPE INDEX – FULL SAMPLE

Because the COPE items are nominal variables, before the PCA, we tested whether there were linear correlations between the items. For each pair of items, there is a significant ($p < 0.05$) correlation according to the Pearson correlation test (Table 3).

According to the PCA, we can distinguish three components (Table 4), the eigenvalues are higher than one in every case, and the components together explain 53.6% of the variance.

The first component (24.5% explained variance) is the negative impact of caregiving and contains all the items according to the theoretical classification. The second component, (15.4% explained variance) is the quality of support and the third component (13.7% explained variance) is the positive impact of caregiving. Both components contain four items.

In contrast to the theoretical classification, the item ‘Do you feel supported by your family?’ fits better with the positive value component than with the quality of support (0.5 in the positive value and it was 0.4 in the quality of support component), and the item ‘Do you feel that anyone appreciates you as a caregiver?’ fits better with the quality of support component than with the positive value (0.65 in the quality of support and 0.32 in the positive value).

The Cronbach’s α value used to examine internal validity. The overall Cronbach’s α for the 15 items was 0.860, however, in several cases, the inter-item correlations were low (under 0.250), thus it is recommended to use the sub-scales. The Cronbach’s

	N	ALWAYS	OFTEN	SOMETIMES	NEVER
COPE 1: Overall, do you feel well supported in your role of caregiving?	935	9.4%	14.4%	36.9%	39.3%
COPE 2: Do you feel you cope well as a caregiver?	981	17.9%	45.6%	32.7%	3.8%
COPE 3: Do you find caregiving too demanding?	990	23.7%	48.7%	24.6%	2.9%
COPE 4: Does caregiving cause difficulties in your relationship with your friends?	981	20.4%	36.4%	29.9%	13.4%
COPE 5: Does caregiving have a negative effect on your physical health?	991	14.8%	36.6%	36.4%	12.1%
COPE 6: Does caregiving cause difficulties in your relationship with your family?	991	11.1%	37.2%	34.3%	17.4%
COPE 7: Does caregiving cause you financial difficulties?	982	20.5%	28.2%	30.3%	21.0%
COPE 8: Do you feel trapped in your role as caregiver?	979	23.5%	34.5%	27.3%	14.7%
COPE 9: Do you feel well supported by friends or neighbours?	978	9.0%	23.0%	45.1%	22.9%
COPE 10: Do you find caregiving worthwhile?	876	59.5%	23.4%	13.7%	3.4%
COPE 11: Do you feel supported by your family?	988	28.0%	32.8%	32.0%	7.2%
COPE 12: Do you have a good relationship with the person you care for?	990	44.0%	39.4%	15.2%	1.4%
COPE 13: Do you feel well supported by health and social services?	953	4.0%	11.1%	37.0%	47.8%
COPE 14: Do you feel that anyone appreciates you as a caregiver?	972	9.4%	19.3%	46.5%	24.8%
COPE 15: Does caregiving have a negative effect on your emotional well-being?	987	14.4%	34.0%	39.3%	12.3%

Table 2 Responses to COPE Index items.

	COPE 1	COPE 2	COPE 3	COPE 4	COPE 5	COPE 6	COPE 7	COPE 8	COPE 9	COPE 10	COPE 11	COPE 12	COPE 13	COPE 14	COPE 15
COPE 1	1	0.357**	0.268**	0.331**	0.310**	0.354**	0.302**	0.408**	0.310**	0.211**	0.293**	0.155**	0.452**	0.408**	0.288**
COPE 2	0.357**	1	0.244**	0.228**	0.272**	0.312**	0.137**	0.325**	0.172**	0.251**	0.229**	0.367**	0.220**	0.291**	0.353**
COPE 3	0.268**	0.244**	1	0.452**	0.559**	0.436**	0.339**	0.474**	0.254**	0.185**	0.170**	0.202**	0.185**	0.239**	0.482**
COPE 4	0.331**	0.228**	0.452**	1	0.453**	0.550**	0.278**	0.538**	0.304**	0.184**	0.222**	0.162**	0.175**	0.277**	0.451**
COPE 5	0.310**	0.272**	0.559**	0.453**	1	0.534**	0.352**	0.517**	0.225**	0.236**	0.217**	0.211**	0.186**	0.284**	0.556**
COPE 6	0.354**	0.312**	0.436**	0.550**	0.534**	1	0.300**	0.549**	0.319**	0.259**	0.371**	0.257**	0.162**	0.310**	0.553**
COPE 7	0.302**	0.137**	0.339**	0.278**	0.352**	0.300**	1	0.387**	0.133**	0.073**	0.138**	0.031**	0.232**	0.253**	0.241**
COPE 8	0.408**	0.325**	0.474**	0.538**	0.517**	0.549**	0.387**	1	0.353**	0.285**	0.324**	0.292**	0.232**	0.371**	0.581**
COPE 9	0.310**	0.172**	0.254**	0.304**	0.225**	0.319**	0.133**	0.353**	1	0.224**	0.437**	0.182**	0.300**	0.450**	0.274**
COPE 10	0.211**	0.251**	0.185**	0.184**	0.236**	0.259**	0.073*	0.285**	0.224**	1	0.301**	0.402**	0.172**	0.312**	0.321**
COPE 11	0.293**	0.229**	0.170**	0.222**	0.217**	0.371**	0.138**	0.324**	0.437**	0.301**	1	0.286**	0.250**	0.365**	0.285**
COPE 12	0.155**	0.367**	0.202**	0.162**	0.211**	0.257**	0.031**	0.292**	0.182**	0.402**	0.286**	1	0.169**	0.259**	0.363**
COPE 13	0.452**	0.220**	0.185**	0.175**	0.186**	0.162**	0.232**	0.232**	0.300**	0.172**	0.250**	0.169**	1	0.370**	0.179**
COPE 14	0.408**	0.291**	0.239**	0.277**	0.284**	0.310**	0.253**	0.371**	0.450**	0.312**	0.365**	0.259**	0.370**	1	0.321**
COPE 15	0.288**	0.353**	0.482**	0.451**	0.556**	0.553**	0.241**	0.581**	0.274**	0.321**	0.285**	0.363**	0.179**	0.321**	1

Table 3 Correlations of the COPE items.

**Pearson correlation is significant at the 0.001 level.

*Pearson correlation is significant at the 0.05 level.

COPE ITEMS	THEORETICAL CLASSIFICATION	COMPONENT					
		1		2		3	
		A	B	A	B	A	B
Do you find caregiving too demanding?	Negative impact	**0.71**	**0.73**		–0.12		–0.04
Does caregiving cause difficulties in your relationship with your friends?		**0.73**	**0.71**		–0.16		–0.09
Does caregiving have a negative effect on your physical health?		**0.76**	**0.77**		–0.10		–0.17
Does caregiving cause difficulties in your relationship with your family?		**0.62**	**0.73**		–0.14		–0.27
Does caregiving cause you financial difficulties?		**0.61**	**0.50**		–0.39		0.27
Do you feel trapped in your role as caregiver?		**0.70**	**0.74**		–0.25		–0.22
Does caregiving have a negative effect on your emotional well-being?		**0.70**	**0.69**		–0.09		–0.39
Do you feel you cope well as a caregiver?	Positive value		–0.21		0.24	**0.51**	**0.45**
Do you find caregiving worthwhile?			–0.11		0.11	**0.73**	**0.68**
Do you have a good relationship with the person you care for?			–0.14		0.06	**0.74**	**0.75**
Do you feel that anyone appreciates you as a caregiver?			–0.16		**0.65**	**0.59**	0.32
Overall. do you feel well supported in your role of caregiving?	Quality of support		–0.29	**0.69**	**0.68**		0.08
Do you feel well supported by friends or neighbours?			–0.16	**0.66**	**0.56**		0.29
Do you feel supported by your family?			–0.13	**0.60**	0.40		**0.50**
Do you feel well supported by health and social services?			–0.05	**0.69**	**0.77**		0.05

Table 4 Principal Component Analysis (full sample) (*n* = 842).

Eigenvalues and variance: Component 1: 3.67 and 24.5%; Component 2: 2.05 and 13.7%; Component 3: 2.31 and 15.4%. 1: negative impact of caregiving. 2: quality of support. 3: positive value of caregiving.

A: six-country sample. B: Hungarian sample.

There is a highlighting in the row when the item in the Hungarian sample does not fit the same component as in the six-country sample.

α values are high enough for all three subscales of the COPE Index. Table 6 shows the Cronbach's α values calculated with the original items (Balducci et al., 2008), and assigned to each subscale based on our PCA (modified). In the case of the quality of support subscale, there is a slight difference between the original and modified subscales, the Cronbach's α value is higher in the modified version, but this difference is only 0.04. Due to the slight difference between the 'original' and 'modified' indices, we suggest using the 'original' index to help comparative research.

COMPONENT STRUCTURE OF THE COPE INDEX – SUB-SAMPLES OF ACTIVE AND FORMER CARERS

After analysing the full sample, we tested whether we could replicate our results with sub-samples of active carers (who provided care for a family member at the time of data collection) and former carers (Table 5). We identified three components; however, in the case of active carers, the component structure differs from that of the full sample and former carers. The first component includes items that are part of the positive impact according to the theoretical classification. The only exception is the item 'Does caregiving cause you financial difficulties?' which fits equally into the first and second components for active carers. As for the second and third components, in the case of former carers, these components contain the same items as in the full sample. However, for active carers, the second and third components contain items that are parts of both the positive value and the quality of support components, according to the theoretical classification.

COPE INDEX VALUES OF ELDERLY FAMILY CARERS

Table 7 presents the average scores of the three subscales. For positive value and quality of support, we created the subscales based on the original (Balducci et al., 2008) distribution of the items and we created the modified version based on the results of the PCA.

Based on the mean and standard deviation, it can be seen that there is only a slight difference between the subscales generated in the two ways in this sample.

COPE ITEMS	COMPONENT					
	1		2		3	
	A	B	A	B	A	B
Do you find caregiving too demanding?	**0.74**	**0.70**	0.05	0.08	0.04	0.23
Does caregiving cause difficulties in your relationship with your friends?	**0.69**	**0.73**	0.17	0.03	0.15	0.15
Does caregiving have a negative effect on your physical health?	**0.79**	**0.76**	0.14	0.12	0.13	0.11
Does caregiving cause difficulties in your relationship with your family?	**0.74**	**0.75**	0.17	0.27	0.25	0.07
Does caregiving cause you financial difficulties?	**0.48**	**0.47**	**0.48**	–0.27	–0.21	**0.45**
Do you feel trapped in your role as caregiver?	**0.77**	**0.70**	0.15	0.14	0.27	0.34
Does caregiving have a negative effect on your emotional well-being?	**0.74**	**0.67**	0.09	0.30	0.34	0.11
Do you feel you cope well as a caregiver?	0.30	0.21	**0.76**	0.12	0.14	**0.69**
Do you find caregiving worthwhile?	0.22	0.25	**0.48**	**0.53**	0.27	0.14
Do you have a good relationship with the person you care for?	0.09	0.20	0.24	0.27	**0.58**	**0.58**
Do you feel that anyone appreciates you as a caregiver?	0.29	–0.04	–0.04	**0.70**	**0.60**	0.18
Overall. do you feel well supported in your role of caregiving?	0.14	0.15	0.22	**0.59**	**0.64**	0.33
Do you feel well supported by friends or neighbours?	0.12	0.21	0.12	**0.73**	**0.64**	–0.02
Do you feel supported by your family?	–0.06	0.08	**0.77**	0.06	0.20	**0.74**
Do you feel well supported by health and social services?	0.01	0.16	**0.57**	0.29	**0.50**	**0.64**

Table 5 Principal component analysis (sub-samples of active and former carers) (*n* = 842).

Eigenvalues and variance: A: Component 1: 3.82 and 25.5%; Component 2: 2.09 and 13.9%; Component 3: 2.23 and 14.9%; B: Component 1: 3.57 and 23.8%; Component 2: 2.05 and 13.7%; Component 3: 2.36 and 15.7%.

A: Hungarian sample: active carers. B: Hungarian sample: former carers.

		VARIABLES					
		NEGATIVE IMPACT		QUALITY OF SUPPORT		POSITIVE IMPACT	
		1	2	1	2	1	2
Hungarian sample	Original	0.851	0.855	0.670	0.671	0.633	0.636
	Modified	–	–	0.706	0.707	0.625	0.631
Six-country sample		0.83	–	0.66	–	0.64	–

Table 6 Internal consistency analyses by Cronbach's α in Hungarian and in the six-country sample (Balducci et al. 2008).

1: Cronbach's α. 2: Cronbach's α on standardised items.

	ORIGINAL			MODIFIED		
	MEANS	*N*	STD.	MEANS	*N*	STD.
Negative impact of caregiving	2.69	928	0.67	–	–	–
Positive value of caregiving	2.08	842	0.56	1.91	854	0.57
Quality of support	2.84	884	0.63	3.01	868	0.64

Table 7 Values of original and modified subscales of COPE Index.

The difference in the case number of subscales shown in the table is due to the fact that the subscales were always calculated only for respondents who answered all questions in the case.

DISCUSSION

It can be seen from these indicators that the participants in our study experienced a high level of burden from caregiving The frequency and occasional length of care in the sample indicates a significant burden: the majority of carers (over 90%) care for their relative daily, and the majority of carers (over 60%) report that those days are taken up with caregiving tasks throughout the day. The intensity of care is also reflected in the care-recipient's ability to self-care, which is typically low in the sample (almost 58% of carers are unable to self-care). Moreover, a significant proportion of respondents have been caring for a very long time: over 20% of the sample have been caring for 6–10 years and over 17% for more than 10 years.

Since the subjective experience of burden depends on a number of dimensions (e.g., the resources available to the individual or the coping strategies he/she uses are important factors cf. Pearlin et al. 1990), a lower objective burden can also lead to a very high subjective experience of burden and high objective burden does not necessarily imply higher subjective workloads – this was also a finding in our previous research (Bagyura et al., 2023; Leleszi-Tróbert et al., 2022; Tróbert, 2019). The complexity of the impact of subjective and objective factors, which needs further investigation, is also confirmed by the research of Hanly and colleagues (Hanly et al., 2015).

Subjective burden is also high in our study sample. Nevertheless, the question 'Do you find caregiving worthwhile?' was answered positively by the majority of respondents. This confirms what many studies report, which is that family carers can experience positive aspects of the caring role despite the stressful nature of caring responsibilities. For example, in their review study, (Lloyd et al., 2016) highlight the following positive aspects of the caregiving process for family carers of people with dementia: role satisfaction, emotional rewards, personal growth, competence and mastery, faith and spiritual growth, relationship gains, sense of duty, reciprocity.

However, it is also possible that some respondents gave a positive answer about the value of the caring role because they are trying to meet perceived societal expectations. In our previous research, meeting societal expectations also emerged as a motivating factor for family carers (Leleszi-Tróbert at al., 2023). Moral-Fernández et al. (2018) also emphasise the role of social conformity in the adoption of family caregiving.

The results of the Cope Index used in our study indicate that caring poses many difficulties for carers.

Since Balducci et al. (2008) validated the COPE Index in a six-country sample, the index has been used in several countries. We used the index in a Hungarian sample of carers. Using PCA, we examined the internal structure of the COPE Index in a Hungarian sample of carers and tested the internal consistency reliability of the emergent components. As in the Balducci et al. (2008) study, three components were distinguished, although two items had their highest loadings on different components in our analysis: 'Do you feel that anyone appreciates you as a carer' loaded on the quality of support component (instead of the positive value of caregiving), and 'Do you feel supported by your family' loaded on the positive value of caregiving component (instead of the quality of support). Cronbach's α indicated that the internal consistency reliability of the three subscales based on the components in our analyses was satisfactory. We also tested Cronbach's α in our sample for the subscales based on the original components from Balducci et al. (2008) and found only modest differences between the 'original' and 'modified' subscales.

Our paper demonstrates that the instrument does not function as it did in the original studies, and that recent experiences and retrospective responses can yield different results some difference was observed between the PCA results of the subsamples. For these reasons, the study will be repeated on another sample.

LIMITATIONS

The research has certain limitations that may have an impact on the results.

During the first wave of the pandemic, it was not possible to conduct survey research based on face-to-face interviews, and so the study sample consisted of internet users, most of whom used Facebook when completing the questionnaire.

Besides the advantages presented in the Material and Methods section, the disadvantage of such sampling is that the characteristics of Facebook users may differ from those who are not available on Facebook (Kalimeri et al., 2020); this must be considered in the present study.

The sample was predominantly female, with a majority of participants having completed secondary education and/or tertiary education. Furthermore, 90.6% of participants had to perform care every day, and we do not have much information about what have been termed 'light' carers. These characteristics further limit the generalisability of our findings. Future research needs to work with a more diverse sample, while also examining further the psychometric validity of the Index, including, for example, convergent and divergent validity with other measures.

IMPLICATIONS

Despite the limitations of our study, our results are important, as they demonstrate that the use of the instrument is recommended in Hungarian research. This study has produced a comparable and reliable instrument for use among Hungarian-speaking carers, considering the characteristics of the examined sample.

We can use the results of the COPE Index to compare with other European countries, in addition, our results allow for future broader international comparative studies.

The index can help us examine the impacts of caregiving and the quality of support, which can contribute to developing policies that better assist carers.

COMPETING INTERESTS

The authors have no competing interests to declare.

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