

IMPACT OF CARING ACTIVITIES ON EDUCATION AN ASSESSMENT TOOL

**REPORT FROM THE FIRST INTELLECTUAL OUTPUT (IO1)
IN THE ERASMUS+ PROGRAMME PROJECT
"INNOVATIVE SCHOOL EDUCATION METHODOLOGIES AND TOOLS
FOR GUARANTEEING SOCIAL INCLUSION OF YOUNG CARERS"
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INTRODUCTION

A proportion of young people across Europe carry out a significant role in caring for their ill and/or disabled family member. These caring activities can have a negative impact on the young carers' education, as it can prevent them from working productively at schools (because of the anxiety related to their caring role), maintaining regular class attendance, reaching learning goals and finalising formal high school education. By making innovative educational methodologies and training available to school staff, this project can contribute to promoting young carers-friendly school environments.

YOUNG CARERS

Young carers (YCs) are defined as “children and young persons under 18 years who provide or intend to provide care, assistance or support to another family member. They carry out significant or substantial caring tasks, often on a regular basis, and assume a level of responsibility that would usually be associated with an adult” (Becker, 2000 p. 378). These caring responsibilities may include practical tasks (such as housework), physical/ personal care (such as helping someone dress) and emotional support, contribute to family budget, helping to give medicine, or helping someone communicate (Eurocarers, 2017). Even if there is a lack of data regarding the number of YCs in Europe, the phenomenon is raising attention in many countries. United Kingdom, the leading country in this research area, estimated that around 8% of their population 11–18 years old are YCs (Carers Trust, 2015). Similar data apply to Sweden (7%, 14–16 years) (Nordenfors, Melander, & Daneback, 2014) and Italy (7,1% of young people 15–24 years) (ISTAT, 2015), whereas in other countries there are no data available (as for Portugal and Slovenia) (Eurocarers, 2017).

Taking on a caring responsibility constitutes a relevant risk factor for the occurrence of both immediate and long-term problems, especially among high-intensity YCs, with around 50% experiencing care-related stress and 40% mental health problems (Carers Trust, 2016). YCs often experience consequences in their social life (e.g. few social contacts, social stigma and bullying) (Sempik & Becker, 2013), hi-

gher absenteeism and drop-out rates from education and low employability (Aldridge & Becker, 2003; Becker & Leu, 2014), and less dedicated time for personal development and leisure (Becker & Leu, 2014). These negative consequences can lead to long-term health disadvantages for YCs in the life-course, such as increased risks for prolonged mental illness and occurrence of co-morbidities, and higher life-course social exclusion, due to lower educational qualifications and job opportunities (Becker & Leu, 2014).

YCs can also gain positive skills and attributes from caring such as self-mastery, self-esteem, maturity, empathy and coping strategies. Giving care to a sick family member on a daily basis can help young people learn to be more understanding and tolerant of others. Although there may be positive aspects of being YC, it is important to understand what it means for young people to have a chronically ill family member and to develop interventions to improve support for them to avoid their education and future life being adversely affected (Eurocarers, 2017).

Despite the importance of the phenomenon, Leu and Becker (2017a) have shown that there is a range of different responses to the issue of YC across different countries, from support for the target group in policy and legislation through to a complete lack of recognition and no support. Furthermore, most EU countries have no specific policies or dedicated health and social services that can work in synergy with schools for this purpose and sustain YCs in education and social inclusion more in general (Becker, 2007; Leu & Becker, 2017b). All young people should have equal opportunities to realize their full potential through social inclusion, education and employment, and not be discriminated due to a caregiving responsibility (Eurocarers, 2017).

YOUNG CARERS AND SCHOOL ENVIRONMENTS

Early school leaving is an obstacle to economic growth and employment; it can prevent productivity and competitiveness, and leads to poverty and social exclusion. Young people who leave education and training early often lack skills and qualifications, resulting in an increased risk of unemployment, social exclusion and poverty. Therefore, schools can play a vital role in both early identification and in the provision of support for young carers, as they are a privileged social environment where YC are directly in contact with a series of professionals. These effects concern the possibility that YCs can learn and work productively at school, integrate with other peer pupils, maintain regular class attendance, reach learning goals and finalize formal high school education.

Despite the relevance of YC, teachers and school staff are usually not aware of either the phenomenon nor the frequency and are therefore not able to identify YCs in their classes. Raising awareness in school environments about YC and the measures to support them will hopefully lead to reducing school dropouts of young carers in the short term, improve educational efforts and attitudes towards higher education, and enhance employability in the long term, with positive consequences also on YCs' social inclusion and wellbeing.

THE EDY-CARE PROJECT

Based on the rationale above, the EDY-CARE project was constructed and aims to empower teachers and other school staff (e.g., school nurses, psychologists, social workers, management) in upper secondary education (ISCED-3 level) to recognise adolescent young carers (16–19 years old) in classes and maximize their learning opportunities, while ensuring their social inclusion. The specific objectives for this part of the project (Intellectual Output 1) was to develop an assessment tool that could help teachers and school staff to identify young carers. This included a self-assessment questionnaire to be completed by students with caring responsibilities which focuses on the perceived impacts of their caring role on their education. Therefore, the focus of this report is on providing a clear overview of the process for developing an assessment tool that could help teachers and school staff to identify young carers, as opposed to focusing on the actual results of the piloting of the new assessment tool. For this reason, the actual main results from the piloting of the new assessment tool are included as an Appendix for the reader.



PROCESS

The leader of this Intellectual Output was the University of Ljubljana (Slovenia), which coordinated the efforts of developing, piloting and testing the new assessment tool for identifying YCs. All the other partners (except EuroCarers) supported these tasks and performed the testing in their country with teachers and school staff in some classes. EuroCarers gave feedback to the realisation of the tool, and supported the English translation and publication on-line. In order to identify possible YCs in the school, partners applied the MACA-YC18 (Joseph, Becker, & Becker, 2012) scale as a screening tool. This 18 item questionnaire aims to assess the intensity of care provided by young people. The EDY-CARE project team has followed the following timeline and task division in preparation of the assessment tool.

→ Phase 1:

development and testing of Output 1 during the period from October 2017 to August 2018): the assessment tool was produced and tested in the following sequence.

→ October 2017:

discussion around measurement tools during the transnational project kick off meeting and decision on final questionnaire. From past experiences of using the Multidimensional Assessment of Caring Activities-MACA as a screening tool by the Italian partners, it became obvious that the questionnaire needed to be expanded by a series of follow-up items, identifying a variety of situations which may lead to higher MACA scores. These situations may or may not be related to caring responsibilities (e.g. a young person may be responsible for a larger amount of household tasks and supervision of siblings because they live in a single parent household or a household where parents are both working full time).

→ October to November 2017:

translating the questionnaire MACA to the Slovenian language (the process of second translation is completed, the process of quality control has started).

→ November and December 2017:

drafting a web questionnaire in the Slovenian language and cognitive pretesting via cognitive pretesting techniques (Expert evaluations). Drafting a list of questions in English and getting suggestions and comments from national partners.

→ December 2017:

quantitative test on proxy respondents (students of Faculty of Social Sciences and Faculty of Health Sciences taking Questionnaire Design course – estimated number of respondents: n=100).

→ January 2018:

analysis of qualitative testing and of quantitative testing (measurement properties, basic statistics, Cronbach's Alpha, Principal component analysis).

→ February 2018:

preparing the report and the draft questionnaire in English and disseminating to project partners.

→ February and March 2018:

translating into national languages using the Translation, Review, Adjudication, Pre-testing and Documentation, TRAPD, procedure (European Social Survey, 2016).

→ April 2018:

Transnational project meeting in Slovenia with internal pretesting phase using vignette cognitive testing method (n=10). The assessment tool was finalized in web format.

→ May and June 2018:

Piloted in three classes (the goal was to obtain at least 50 respondents in each country).

Piloting took place in the following sequence:

Country	Dates of piloting	No of participants
Slovenia	April and May 2018	400
Sweden	April 2018	69
Italy	May 2018	43
Portugal	May 2018	58

July and August 2018: evaluation of the measurement properties of the assessment tool on pilot national data (measurement properties, basic statistics, Cronbach's Alpha, Principal component analysis). Sending the statistical reports to national partners.

December 2018: Finalizing the assessment tool into national languages, based on pre-testing results (and sending feedback to the University of Ljubljana, Faculty of Social Sciences) and releasing the final version of the web questionnaire in national languages.

RESULTS

As the main focus of this final report for Intellectual Output 1 is the actual process for the development of the assessment tool to help teachers and school staff to identify YCs, the core results from the piloting of the new assessment tool are reported in Appendix 1. Appendix 1 includes core results tables together with a short explanatory text for each table. There are some highlights, which are summarized here to provide an overview of the process of drafting, co-creating, piloting and fine-tuning the assessment tool. First of all, quite early in the process, we realized that the existing tools for identifying YC have some shortcomings. To be specific, the MACA assessment tool, which was the starting point of our development, proved to be country context sensitive in terms of expecting a mean value of caring activities to distinguish carers from non-carers. To elaborate, the mean value of caring activities (YC vs non YC), which was found in the UK, proved to be too low to distinguish YC from non YC in other countries. As a consequence, we developed a series of multiple choice statements in order to understand specific life situations of young people and to understand the mean MACA scores. The series of statements were drafted

and then completed in the process of iterative circles, i.e. the first draft was proposed by the Slovenian team and then commented and refined by the whole project team. The drafted version was then translated into national languages, verified by national groups of stakeholders (e.g. teachers, YCs themselves, ex YCs) and piloted empirically in a number of classrooms in all participating countries. The University of Ljubljana team then analysed collected data and prepared a draft report, which was reviewed by national teams, which then proposed additional statements to fully complete the series. The second most important finding is that there is no average YC, i.e. YCs' specific carers situations are empirically linked to the types and amounts of caring activities they provide. So for example, a sibling YC would carry out a different set of activities on a specific intensity scale than a YC who provides care to a grandmother.

SHORT DISCUSSION AND CONCLUSION

Since we have invested intensively into the process of the development of the assessment tool in a cross-country context, our results are more universal and less-country specific than they would be otherwise. The major advantage of the process was engaging in international research work within a group of totally committed project members. The major challenge was to keep to the timeline and to keep track of all partial research steps to actualize the final results.

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Appendix 1: Results: piloting of the questionnaire

Piloting of the MACA questionnaire and the follow-up descriptive items to elaborate on a young person's life situation took place in four countries. All countries were involved in the Translation, Review, Adjudication, Pre-testing and Documentation, TRAPD, procedure (European Social Survey, 2016) (translations in groups, follow-up improvement translation, verifying a few items with experts – ex young carers). When final translations were approved by national teams, the web questionnaire was designed for each of the participant countries.

Piloting took place in the following sequence:

Country	Dates of piloting	No. of participants
Slovenia (SL)	April and May 2018	400
Sweden (SW)	April 2018	69
Italy (IT)	May 2018	43
Portugal (PT)	May 2018	58

Country comparisons

Table 1. Participants by gender per country, N=572.

	SL <i>n</i> (%)	SW <i>n</i> (%)	IT <i>n</i> (%)	PT <i>n</i> (%)	Total
Boys	45 (11.3)	28 (40.6)	5 (11.6)	16 (27.6)	95 (16.6)
Girls	355 (88.8)	41 (59.4)	38 (88.4)	42 (72.4)	477 (83.4)
<i>N</i>	400	69	43	58	572

In all the samples the majority of participants were girls, with Sweden having the highest proportion of boys included.

Most of participants were 19 years old, including 342 (85.3%) participants in the Slovenian sample, and 66 (94.3%) participants in the Swedish sample. Participants in the other two samples were younger. In the Italian sample, 25 (58.1%) participants were born 18 years old and 16 (37.2%) were 17, while 45 (77.6%) participants were even younger, 16 years old, in the Portuguese sample.

Table 2. Birth country of participants and their parents.

		SL	SW	IT	PT	Total
Born in a country where lives	<i>n</i> (%)	197 (97.5)	45 (95.7)	38 (92.7)	53 (98.1)	333 (96.8)
	<i>N</i>	202	47	41	54	344
Mother born in a country where lives	<i>n</i> (%)	184 (91.5)	44 (93.6)	40 (97.6)	49 (90.7)	317 (92.4)
	<i>N</i>	201	47	41	54	343
Father born in a country where lives	<i>n</i> (%)	173 (86.5)	43 (91.5)	40 (97.6)	45 (83.3)	301 (88.0)
	<i>N</i>	200	47	41	54	342

Almost all participants and their parents were born in the country where they currently abide. No major differences among countries were noted.

Table 3. Distribution of answers to question: “Father has a job”.

	SL <i>n</i> (%)	SW <i>n</i> (%)	IT <i>n</i> (%)	PT <i>n</i> (%)	Total
Yes	176 (87.1)	44 (93.6)	36 (87.8)	44 (81.5)	300 (87.2)
No	14 (6.9)	2 (4.3)	3 (7.3)	5 (9.3)	24 (7.0)
Don't know	3 (1.5)	0	0	2 (3.7)	5 (1.5)
Don't know or see him	9 (4.5)	1 (2.1)	2 (4.9)	3 (5.6)	15 (4.4)
<i>N</i>	202	47	41	54	344
If No					
He is sick, or retired	5 (35.7)	1 (50.0)	2 (66.7)	4 (80.0)	12 (50.0)
He is looking for a job	4 (28.6)	1 (50.0)	1 (33.3)	1 (20.0)	7 (29.2)
He takes care of others, or is full-time at home	4 (28.6)	0	0	0	4 (16.7)
I don't know	1 (7.1)	0	0	0	1 (4.2)
<i>N</i>	14	2	3	5	24

Most of the parents have a job, with Sweden having highest employment for fathers and Italy for mothers, while Portugal had the lowest employment for both parents.

Table 4. Distribution of answers to question: “Mother has a job”.

	SL <i>n</i> (%)	SW <i>n</i> (%)	IT <i>n</i> (%)	PT <i>n</i> (%)	Total
Yes	181 (88.7)	44 (93.6)	40 (97.6)	45 (84.9)	310 (89.9)
No	22 (10.8)	2 (4.3)	0	8 (15.1)	32 (9.3)
Don't know or see her	1 (0.5)	1 (2.1)	1 (2.4)	0	3 (0.9)
<i>N</i>	204	47	41	53	345
If No					
She is sick, or retired	3 (13.6)	2 (100.0)		1 (12.5)	6 (18.6)
She is looking for a job	7 (31.8)	0		3 (37.5)	10 (31.3)
She takes care of others, or is full-time at home	9 (40.9)	0		3 (37.5)	12 (37.5)
I don't know	3 (13.6)	0		1 (12.5)	4 (12.5)
<i>N</i>	22	2		8	32

Table 5. Distribution of answers to question: “People who live in the home where you live most of the time”, *N*=558 (multiple answers possible).

	SL <i>n</i> (%)	SW <i>n</i> (%)	IT <i>n</i> (%)	PT <i>n</i> (%)	Total
Mother	377 (97.4)	58 (85.3)	41 (95.3)	56 (96.6)	533 (95.5)
Father	319 (82.4)	51 (75.0)	31 (72.1)	46 (79.3)	448 (80.3)
Stepmother	1 (0.3)	1 (1.5)	0	0	2 (0.4)
Stepfather	16 (4.1)	3 (4.4)	4 (9.3)	2 (3.4)	25 (4.5)
Foster	1 (0.3)	0	1 (2.3)	0	2 (0.4)
Others	45 (11.6)	22 (32.4)	24 (55.8)	30 (51.7)	123 (22.0)
<i>N</i>	387	68	43	58	558

Almost all participants lived with their mother and most of them with their father as well. Participants also mentioned their siblings living in the same household. In Italy, Portugal and Slovenia, co-living with grandparents was also observed, while in Sweden we noted some participants living on their own.

Table 6. Distribution of answers to question: “Would you say your general health is...?”, N=557.

	SL <i>n</i> (%)	SW <i>n</i> (%)	IT <i>n</i> (%)	PT <i>n</i> (%)	Total
Excellent	126 (32.6)	12 (17.6)	9 (20.9)	17 (29.8)	164 (29.4)
Good	196 (50.6)	37 (54.4)	28 (65.1)	37 (64.9)	300 (53.9)
Fair	55 (14.2)	18 (26.5)	4 (9.3)	2 (3.5)	79 (14.2)
Poor	10 (2.6)	1(1.5)	2 (4.7)	1 (1.8)	14 (2.5)
<i>N</i>	387	68	43	57	557

Most of the participants felt that their general health is good. Almost one third of young people in Slovenia and Portugal described their general health as excellent. On the other hand, over a quarter of Swedish participants described their general health as fair (or poor).

Table 7. Mean and standard deviation of answers to question: “In general, where on the ladder do you feel you stand at the moment?” (10-best possible life, 0 – worst possible life), N=547.

	SL	SW	IT	PT	Total
<i>N</i>	380	66	43	57	547
<i>M (SD)</i>	7.36 (1.70)	6.50 (1.75)	7.65 (1.59)	7.19 (1.42)	7.26 (1.69)
<i>min-max</i>	2 - 10	2 – 10	2 - 10	4 - 10	2 - 10

Italian participants obtained the highest score on the life satisfaction ladder and Swedish the lowest. However, all four countries are rather near the total average ($M=7.26$).

Table 8. Distribution of answers to question: “How pressured do you feel by the schoolwork you have to do?”, N=546.

	SL <i>n</i> (%)	SW <i>n</i> (%)	IT <i>n</i> (%)	PT <i>n</i> (%)	Total
Not at all	2 (0.5)	2 (3.0)	2 (4.7)	0	6 (1.1)
A little	35 (9.2)	10 (15.2)	7 (16.3)	14 (24.6)	66 (12.1)
Some	122 (32.2)	26 (39.4)	17 (39.5)	31 (54.4)	197 (36.1)
A lot	220 (58.0)	28 (42.4)	17 (39.5)	12 (21.1)	277 (50.7)
<i>N</i>	379	66	43	57	546

More than half of the Slovenian young people reported feeling a lot of pressure by the schoolwork, followed by their Swedish, Italian and Portuguese peers, where approximately one fifth of participants reported a lot of schoolwork pressure.

Table 9. Results (mean and standard deviation) on MACA total scale and five subscales per country.

		SL	SW	IT	PT	Total
Total Score	<i>M</i>	14.44	10.16	11.34	10.47	13.22
	<i>(SD)</i>	(6.61)	(5.13)	(3.85)	(6.16)	(6.44)
	<i>min-max</i>	2-36	0-27	2-19	2-36	0-36
	<i>N</i>	331	57	41	55	485
Domestic Activity	<i>M</i>	4.41	4.02	3.55	3.77	4.22
	<i>(SD)</i>	(1.32)	(1.37)	(1.31)	(1.56)	(1.38)
	<i>min-max</i>	0-6	0-6	0-6	0-6	0-6
	<i>N</i>	345	58	42	57	503
Household Management	<i>M</i>	2.90	3.17	2.81	2.26	2.86
	<i>(SD)</i>	(1.37)	(1.37)	(1.13)	(1.32)	(1.36)
	<i>min-max</i>	0-6	0-6	0-5	0-6	0-6
	<i>N</i>	347	59	42	57	506
Financial and Practical Management	<i>M</i>	1.70	0.81	0.45	0.93	1.41
	<i>(SD)</i>	(1.36)	(1.24)	(0.74)	(1.32)	(1.37)
	<i>min-max</i>	0-6	0-4	0-3	0-6	0-6
	<i>N</i>	347	59	42	57	506
Personal Care	<i>M</i>	1.34	0.61	0.41	0.75	1.11
	<i>(SD)</i>	(2.01)	(1.55)	(0.92)	(1.74)	(1.89)
	<i>min-max</i>	0-6	0-6	0-4	0-6	0-6
	<i>N</i>	344	59	41	57	502
Emotional Care	<i>M</i>	1.91	0.71	2.79	1.88	1.84
	<i>(SD)</i>	(1.93)	(1.45)	(1.89)	(2.14)	(1.95)
	<i>min-max</i>	0-6	0-6	0-6	0-6	0-6
	<i>N</i>	344	59	42	57	503
Siblings Care	<i>M</i>	2.21	0.83	1.24	1.22	1.85
	<i>(SD)</i>	(2.12)	(1.38)	(1.64)	(1.70)	(2.03)
	<i>min-max</i>	0-6	0-6	0-6	0-6	0-6
	<i>N</i>	346	59	42	55	503

Results on the *MACA Total Score* were highest for the Slovenian sample and lowest for the Swedish one. We can observe a gap in scores between Slovenia and the other three countries. A similar trend is noted also on the subscales as the Slovenian young people scored highest on *Domestic Activity*, *Financial and Practical Management*, *Personal Care*. On the other hand, Swedish participants scored highest among four countries on *Household Management*, while Italian participants scored highest on *Emotional Care*.

Table 10. Distribution of answers to question: “Who is it you provide help to?”, N=481 (multiple answers possible).

	SL n (%)	SW n (%)	IT n (%)	PT n (%)	Total
Mother	313 (94.6)	29 (54.7)	14 (33.3)	18 (33.3)	375 (78.0)
Stepmother	3 (0.9)	1 (1.9)	0	0	4 (0.8)
Father	262 (79.2)	25 (47.2)	12 (28.6)	12 (22.2)	312 (64.9)
Step father	14 (4.2)	4 (7.5)	0	0	18 (3.7)
Brothers/Step Brothers	177 (53.5)	10 (18.9)	11 (26.2)	5 (9.3)	204 (42.4)
Sisters/Step Sisters	167 (50.5)	11 (20.8)	10 (23.8)	8 (14.8)	196 (40.7)
Grandparents	206 (62.2)	5 (9.4)	14 (33.3)	9 (16.7)	234 (48.6)
Other adult relative	73 (22.1)	2 (3.8)	3 (7.1)	1 (1.9)	79 (16.4)
Family friend	43 (13.0)	1 (1.9)	3 (7.1)	4 (7.4)	51 (10.6)
Other	116 (35.0)	11 (20.8)	8 (19.0)	3 (5.6)	139 (28.9)
No care provided	7(2.1)	19 (35.8)	7 (16.7)	24 (44.4)	57(11.9)

Again, we can observe a difference between Slovenia on the one hand and the other three countries on the other hand. Almost all Slovenian participants reported that they provided help to their mother and a great majority to their father as well, while in Sweden approximately half of the participants claimed to provide help to their parents and even less (one fifth to one third) in Italy and Portugal. More than half of the Slovenian young people also named their grandparents, brothers and sisters as persons to whom they provided help. In the other three countries these persons were not mentioned so frequently. Slovenian participants also claimed to provide help to other people and relatives. In Slovenia, Sweden and Portugal we can observe a similar pattern: it is more common for young people to provide help to parents in comparison with grandparents and siblings. In Italy, however, it seems that parents, siblings and grandparents are all provided help in similar proportions.

Table 11. Distribution of answers to question: “I am caring for someone that ...” (multiple answers possible).

<i>N</i>	<i>SL n (%)</i>	<i>SW n (%)</i>	<i>IT n (%)</i>	<i>PT n (%)</i>	Total
Has problems with misuse of alcohol, prescription drugs, illegal drugs or other substances					
381	20 (7.2)	1 (3.4)	0	0	21 (5.5)
Has problems because of old age or ageing					
381	124 (44.6)	5 (17.2)	14 (36.8)	10 (27.6)	153 (40.2)
Has psychological problems					
381	72 (25.9)	4 (13.8)	2 (5.3)	4 (11.1)	82 (21.5)
Has physiological problems					
381	56 (20.1)	2 (6.9)	3 (7.9)	3 (8.3)	64 (16.8)
Has long-term health issues					
381	61 (21.9)	3 (10.3)	1 (2.6)	1(2.8)	66 (17.3)
With a physical disability					
381	32 (11.5)	1 (3.4)	3 (7.9)	2 (5.6)	38 (10.0)
With a learning disability					
381	112 (40.3)	1 (3.4)	1 (2.6)	8 (22.2)	122 (32.0)
With a life limiting condition					
381	14 (5.0)	4 (13.8)	2 (5.3)	2 (5.6)	22 (5.8)
With a mental health illness					
381	17 (6.1)	1 (3.4)	0	3 (8.3)	21 (5.5)
for a brother(s) / a sister (s)					
381	160 (57.6)	8 (27.6)	17 (44.7)	8 (22.2)	193 (50.7)
has no special circumstances (is not ill					
381	91 (32.7)	20 (69.0)	27 (71.1)	20 (55.6)	158 (41.5)
From the lesbian, gay, bisexual or transgender community					
314	11 (4.0)	/	/	3 (8.3)	14 (4.5)
From a travelers community					
314	3 (1.1)	/	/	1 (2.8)	4 (1.3)
From a rural community					
314	37 (13.3)	/	/	1(2.8)	38 (12.1)
From an ethnic minority community					
314	3 (1.1)	/	/	0	3 (1.0)

Most of the participants in the Swedish, Italian and Portuguese sample reported that people to whom they provide help usually have no special circumstances (in terms of illness and other conditions). On the other hand, Slovenian participants frequently named problems related to old age and aging and to a lesser extent psychological problems, physiological problems and long-term health issues. While approximately two fifths of the Slovenian and one fifth of the Portuguese participants named learning difficulties as an issue, it was almost undetected with Swedes and Italians, suggesting possible differences in interpretation and/ or translation of items. Similar to the answers to previous question and results on the MACA Siblings Care subscale, the Slovenian and Italian young people frequently reported to provide help to their brothers and sisters.

Table 12. Distribution of answers to question: “Which of these statements best describes you?” (multiple answers possible).

<i>N</i>	<i>SL n (%)</i>	<i>SW n (%)</i>	<i>IT n (%)</i>	<i>PT n (%)</i>	Total
I do a lot of things in my household because my mother/father works long hours.					
420	115 (39.4)	11 (26.8)	16 (45.7)	29 (55.8)	171 (40.7)
I do a lot of things in my household because it's just my mother and me.					
420	26 (8.9)	3 (7.3)	4 (11.4)	10 (19.2)	43 (10.2)
I do a lot of things in my household because it's just my father and me.					
420	5 (1.7)	0	0	0	5 (1.2)
I do a lot of things in my household because I want to do it myself.					
420	168 (57.5)	17 (41.5)	8 (22.9)	12 (23.1)	205 (48.8)
I do a lot of things in my household because I do them the way I like it.					
420	179 (61.3)	6 (14.6)	6 (17.1)	20 (38.5)	211 (50.2)
I do a lot of things as we share the household tasks among family members.					
420	199 (68.2)	28 (68.3)	13 (37.1)	25 (48.1)	265 (63.1)
I do a lot of things in my household because my parents care for someone who need a lot of help.					
420	15 (5.1)	0	1 (2.9)	4 (7.7)	20 (4.8)
I do a lot of things in my household because my parents have to work a lot to finance my school and this is my way of repaying them.					
420	99 (33.9)	1 (2.4)	4 (11.4)	15 (28.8)	119 (28.3)
I do a lot of things in my household because parents give my allowance for doing things in the household.					
420	17 (5.8)	2 (4.9)	6 (17.1)	4 (7.7)	29 (6.9)
I do a lot of things in my household because my parents work far away.					
420	22 (7.5)	0	1 (2.9)	3 (5.8)	26 (6.2)
I work (part-time) in order to help my family.					
420	79 (27.1)	1 (2.4)	1 (2.9)	1 (1.9)	82 (19.5)
I go with my parents because I have to translate/interpret for them.					
420	7 (2.4)	0	0	0	7 (1.7)
I do a lot of things because my parents can't do it by themselves.					
420	58 (19.9)	1 (2.4)	0	8 (15.4)	67 (16.0)
I take care of my siblings because my parents work.					
128	/	2 (4.9)	6 (17.1)	8 (15.4)	16 (12.5)

Approximately half of the Portuguese and Italian young people reported that they do a lot of things in their household because their parents work long hours, while Slovenian and Swedish young people do them because in their households they share the tasks among family members and they want to do them by themselves. This observation is in line with a higher score on the MACA Household Management subscale. Slovenian and Portuguese participants claimed to do a lot of things in their household because their parents have to work a lot to finance their school and this is a way of repaying them. Furthermore, Slovenian young people also reported to work (part-time) in order to help their family, which corresponds to higher scores on the MACA Financial and Practical Management. On the other hand, it seems that some of the Italian young people do the things in their household because they parents give them allowance.

Table 13. Distribution of answers to question: "Have you talked to someone about this situation?"

	SL <i>n</i> (%)	SW <i>n</i> (%)	IT <i>n</i> (%)	PT <i>n</i> (%)	Total
Yes	65 (28.5)	7 (13.5)	10 (25.0)	13 (25.0)	95 (25.5)
No	76 (33.3)	4 (7.7)	6 (15.0)	15 (28.8)	101 (27.2)
Not relevant	87 (38.2)	41 (78.8)	24 (60.0)	24 (46.2)	176 (47.3)
<i>N</i>	228	52	40	52	372

Around one quarter of Slovenian, Italian and Portuguese young people had already talked to someone about how they feel about caring.

Table 14. Mean and standard deviation of answers to question: "How many times in a last week..."

		SL	SW	IT	PT	Total
You have been absent from school because of help you give/provide to your family?						
Last week	<i>M (SD)</i>	0.14 (0.58)	0	0.15 (0.81)	0.02 (0.14)	0.11 (0.54)
	<i>min-max</i>	0-5	0	0-5	0-1	0-5
	<i>N</i>	221	32	39	51	343
Last month	<i>M (SD)</i>	0.40 (1.33)	0.06 (0.35)	0.54 (3.20)	0.02 (0.14)	0.33 (1.53)
	<i>min-max</i>	0-10	0-2	0-20	0-1	0-20
	<i>N</i>	208	33	39	51	331
Last semester	<i>M (SD)</i>	1.20 (3.44)	0.06 (0.33)	3.25 (18.95)	0.04 (0.28)	1.14 (7.05)
	<i>min-max</i>	0-20	0-2	0-120	0-2	0-120
	<i>N</i>	211	36	40	51	338
you have been late for school because of help you give/provide to your family?						
Last week	<i>M (SD)</i>	0.08 (0.38)	0	0.03 (0.16)	0	0.05 (0.31)
	<i>min-max</i>	0-3	0	0-1	0	0-3
	<i>N</i>	211	32	39	51	333
Last month	<i>M (SD)</i>	0.16 (0.70)	0	0.05 (0.22)	0	0.11 (0.55)
	<i>min-max</i>	0-5	0	0-1	0	0-5
	<i>N</i>	201	33	39	51	324
Last semester	<i>M (SD)</i>	0.46 (2.72)	0	0.18 (0.55)	0	0.31 (2.15)
	<i>min-max</i>	0-35	0	0-2	0	0-35
	<i>N</i>	203	36	40	51	330
you felt very tired and unable to concentrate on the lesson because of help you give/provide to your family?						
Last week	<i>M (SD)</i>	0.39 (1.10)	0		0.31 (1.56)	0.34 (1.14)
	<i>min-max</i>	0-6	0		0-10	0-10
	<i>N</i>	211	32	0	51	294
Last month	<i>M (SD)</i>	1.24 (3.26)	0.09 (0.38)		0.43 (1.83)	0.96 (2.88)
	<i>min-max</i>	0-24	0-2		0-12	0-24
	<i>N</i>	199	33	0	51	283
Last semester	<i>M (SD)</i>	2.52 (7.90)	0.06 (0.33)		0.51 (1.99)	1.85 (6.71)
	<i>min-max</i>	0-60	0-2		0-13	0-60
	<i>N</i>	198	36	0	51	285

Table 14 (continues). Mean and standard deviation of answers to question: “How many times in a last week...”

		SL	SW	IT	PT	Total
you haven't had enough time to prepare properly for a test because of help you give/provide to your family?						
Last week	<i>M (SD)</i>	0.33 (1.02)	0	0.21 (0.62)	0.29 (1.45)	0.28 (1.02)
	<i>min-max</i>	0-8	0	0-3	0-10	0-10
	<i>N</i>	205	32	38	51	326
Last month	<i>M (SD)</i>	1.08 (3.07)	0.03 (0.17)	0.58 (1.78)	0.67 (2.22)	0.84 (2.65)
	<i>min-max</i>	0-30	0-1	0-10	0-12	0-30
	<i>N</i>	195	33	38	51	317
Last semester	<i>M (SD)</i>	2.22 (5.33)	0	1.05 (2.91)	1.00 (3.67)	1.64 (4.59)
	<i>min-max</i>	0-30	0	0-15	0-20	0-30
	<i>N</i>	199	36	39	51	325
you haven't been able to do your homework because of help you give/provide to your family?						
Last week	<i>M (SD)</i>	0.24 (0.97)	0.06 (0.35)	0.08 (0.36)	0.25 (1.55)	0.21 (0.99)
	<i>min-max</i>	0-8	0-2	0-2	0-11	0-11
	<i>N</i>	206	32	38	51	327
Last month	<i>M (SD)</i>	0.82 (2.86)	0.24 (1.39)	0.39 (1.22)	0.35 (1.74)	0.64 (2.44)
	<i>min-max</i>	0-30	0-8	0-5	0-12	0-30
	<i>N</i>	197	33	38	51	319
Last semester	<i>M (SD)</i>	1.53 (4.05)	0	0.79 (2.13)	0.47 (2.09)	1.10 (3.40)
	<i>min-max</i>	0-30	0	0-10	0-14	0-30
	<i>N</i>	198	36	39	51	324

Average number of days that affected their school attendance due to giving/ providing help to family is low (less than 1). Although most of the participants did not claim any days that affected their school attendance, we can observe a large dispersity of results. For example, up to 120 school absence days in the last semester were reported in the Italian sample, while in the Slovenian sample participants reported up to 35 days of being late for school, 60 days of being tired and unable to concentrate on lessons, 30 days of not having enough time to prepare properly for a test, and 30 days of not being able to do their homework.

Table 15. Mean and standard deviation of answers to question: “How many times in a last semester...”

	SL	SW	IT	PT	Total
Because of help you give/provide to your family you haven't been able to attend additional activities offered by school?					
<i>M (SD)</i>	0.35 (1.26)	0	0.05 (0.31)	0.33 (1.90)	0.27 (1.24)
<i>min-max</i>	0-10	0	0-2	0-13	0-13
<i>N</i>	224	37	41	49	351
Because of help you give/provide to your family you haven't been able to attend school trips/excursions during?					
<i>M (SD)</i>	0.19 (0.98)	0	0	0.06 (0.43)	0.13 (0.80)
<i>min-max</i>	0-8	0	0	0-3	0-8
<i>N</i>	220	37	41	49	347
Because of help you give/provide to your family you haven't been able to attend activities in off school time?					
<i>M (SD)</i>	1.64 (6.79)	0.05 (0.33)	0.20 (0.81)	0.39 (1.17)	1.13 (5.48)
<i>min-max</i>	0-84	0-2	0-5	0-5	0-84
<i>N</i>	222	37	41	49	349

We can observe a similar situation as in the previous question. While the average results are mainly less than 1 (time), we can note that young people were not able to attend additional activities in the last semester due to help given/ provided to family up to 13 times in Portugal and up to 10 times in Slovenia. Slovenian young people also claimed not being able to attend school trips/ excursion up to 8 times and not being able to attend activities outside of normal school hours up to 84 times.

Countries' overview

For each of the participating countries we present a detailed analysis, where we examined the MACA Total score and all five subscales scores for each of the observed caring situations.

Furthermore, we report results of the hierarchical cluster analysis, using Ward's method and squared Euclidian distance. We aimed to identify how different variables, namely MACA-YC18 items and variables describing caring situations, link and group together. It should be noted that not all the items describing the caring situations were included in all the samples. For example, the Slovenian questionnaire did not contain an item: "I take care of my siblings because my parents work"; while Swedish and Italian questionnaire did not contain the following items: "I am caring for someone from a travellers community/ from a rural community/ from an ethnic minority".

For all 18 MACA-YC18 items we also conducted exploratory factor analysis for the Slovenian, Swedish and Portuguese samples and principal component analysis for the Italian, because EFA was not possible probably due to the small sample size. First we have used oblique (direct oblimin) and then with orthogonal (varimax) rotation in the countries where the components / factors on MACA-YC18 were not correlated.

Table 16. Means and standard deviations on MACA-YC18 by presence of a situation in Slovenian sample.

		N	M							SD						
			Domestic	Household	Financial	Personal	Emotional	Sibling	Total	Domestic	Household	Financial	Personal	Emotional	Sibling	Total
Providing help to...																
mother	292	4,43	2,94	1,76	1,41	1,99	2,30	14,78	1,29	1,39	1,39	2,03	1,94	2,15	6,72	
step mother	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
father	244	4,47	2,96	1,76	1,37	1,98	2,36	14,80	1,29	1,38	1,41	2,04	1,94	2,15	6,60	
step father	14	4,43	3,00	1,86	1,86	2,29	3,21	16,64	1,60	1,47	0,95	2,51	2,13	2,01	7,42	
(step) brothers	164	4,44	2,93	1,82	1,44	1,97	2,65	15,16	1,26	1,40	1,40	2,04	1,91	2,14	6,68	
(step) sisters	157	4,58	2,98	1,90	1,68	2,27	3,04	16,48	1,30	1,46	1,47	2,15	1,95	2,07	7,03	
grandparents	192	4,52	3,11	1,78	1,62	2,28	2,50	15,80	1,35	1,37	1,33	2,12	1,95	2,18	6,66	
other adult relative	69	4,56	3,22	1,90	1,27	2,01	2,64	15,42	0,99	1,57	1,39	2,01	1,95	2,27	6,64	
family friend	39	4,61	3,15	1,85	1,71	2,15	2,68	15,95	1,36	1,48	1,29	2,39	1,63	2,22	7,39	
other	108	4,47	3,05	1,87	1,47	2,06	2,30	15,06	1,24	1,33	1,39	2,05	2,02	2,19	6,75	
nobody	7	4,57	2,14	0,57	0,43	0,29	0,43	8,43	1,72	0,38	0,53	1,13	0,49	1,13	3,41	
Caring situations																
addiction	18	4,61	3,28	2,28	1,78	2,56	2,39	16,89	1,50	1,64	1,84	2,37	1,98	2,28	8,57	
ageing	115	4,73	3,29	2,07	1,82	2,52	2,32	16,73	1,15	1,33	1,44	2,15	1,98	2,22	7,12	
psychological problems	65	4,61	3,07	2,28	1,96	2,36	2,49	16,58	1,24	1,40	1,56	2,30	2,02	2,35	7,67	
physiological problems	49	4,62	3,04	1,72	1,76	2,23	2,04	15,29	1,14	1,37	1,54	2,24	1,80	2,08	7,20	
long-term health issues	57	4,75	3,17	2,12	1,95	2,64	2,31	16,81	1,29	1,31	1,60	2,22	1,90	2,21	7,62	
physical disability	30	4,77	3,27	2,42	2,97	3,23	3,58	20,17	1,36	1,55	1,86	2,63	1,82	2,14	8,00	
learning disability	106	4,48	3,11	1,84	1,29	2,03	2,55	15,21	1,28	1,42	1,49	1,84	1,97	2,14	6,79	
life limiting condition	12	4,58	3,54	3,15	2,69	3,62	3,54	21,25	1,16	2,03	2,03	2,50	2,10	2,26	10,20	
mental health illness	12	4,64	3,85	2,46	2,93	3,71	3,14	20,50	1,01	1,41	2,15	2,76	2,13	2,38	9,44	
brothers/sisters	147	4,55	3,05	1,86	1,61	2,24	3,29	16,63	1,26	1,47	1,45	2,06	1,94	1,98	6,74	
not ill	87	4,62	2,97	1,71	1,49	2,27	2,51	15,61	1,27	1,43	1,38	2,14	2,04	2,25	7,07	

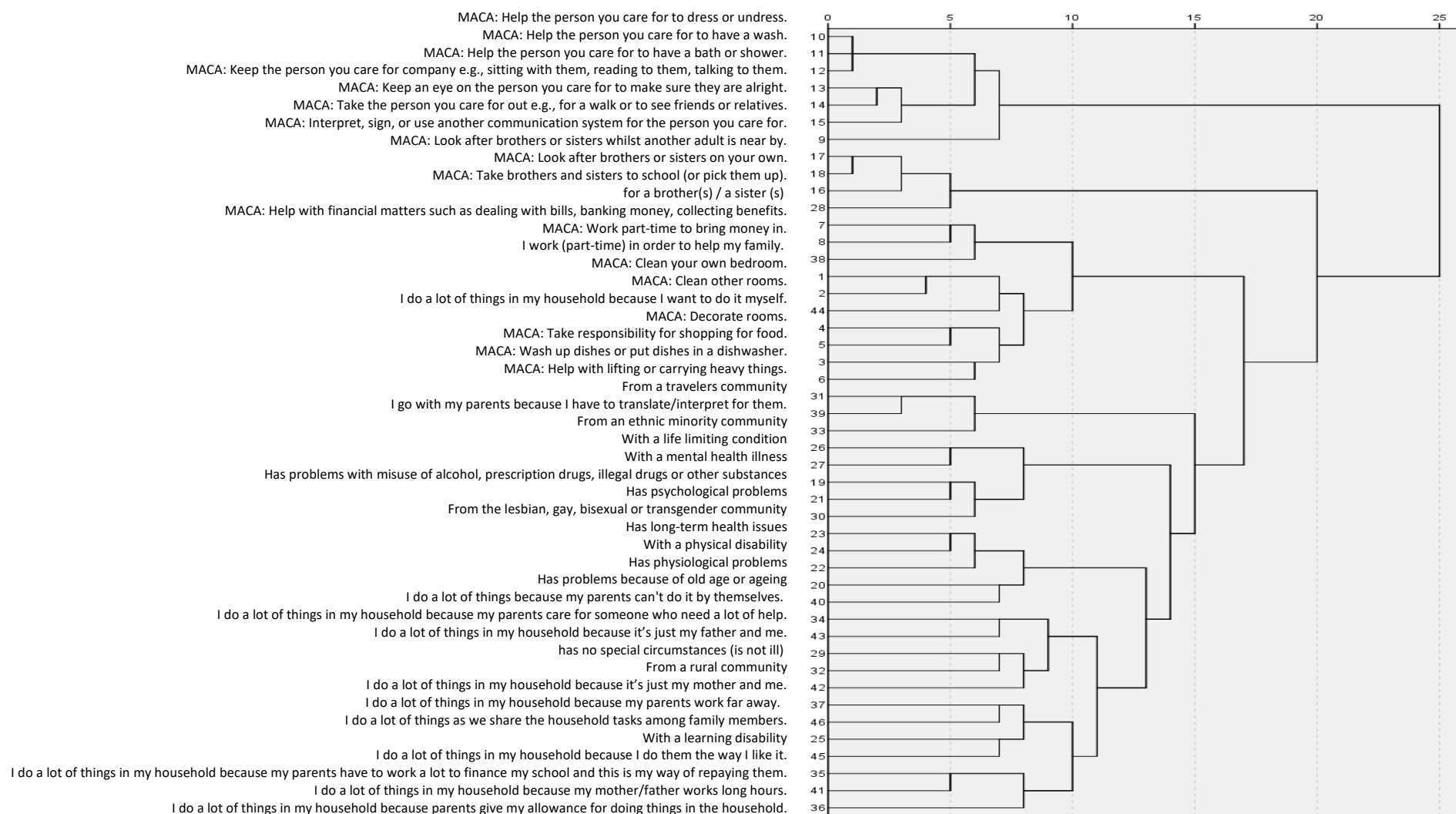
LGBT	8	4,33	2,44	1,88	1,12	2,12	2,89	14,25	1,41	0,88	0,83	1,46	1,89	2,26	2,38
travelers	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
rural	34	4,74	3,39	1,97	1,71	2,56	2,17	16,29	1,04	1,55	1,30	2,11	2,10	2,17	6,86
ethnic minority	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reasons for caring															
parents working long hours	110	4,87	3,33	2,17	1,96	2,81	2,55	17,66	1,10	1,38	1,40	2,27	1,92	2,11	6,71
alone with mother	24	4,71	3,40	2,16	1,88	2,40	2,36	16,92	1,16	1,26	1,18	2,24	1,91	2,55	7,85
alone with father	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
want to do it	159	4,75	3,16	1,93	1,56	2,11	2,40	15,82	1,23	1,47	1,42	2,07	1,93	2,17	7,00
to do it my way	167	4,40	2,90	1,74	1,45	1,97	2,09	14,44	1,32	1,45	1,39	1,99	1,92	2,10	6,86
sharing tasks	187	4,61	2,99	1,75	1,36	1,92	2,21	14,79	1,19	1,41	1,39	1,92	1,84	2,14	6,55
parents care for someone	15	5,20	3,07	1,67	1,80	3,00	2,87	17,60	1,32	1,49	1,05	2,04	1,69	2,03	6,87
repaying parents	89	4,79	3,17	1,91	1,76	2,34	2,22	16,09	1,17	1,43	1,38	2,22	1,94	2,22	7,05
allowance	17	4,59	3,76	1,82	1,76	2,65	2,00	16,59	1,33	1,39	1,63	1,92	1,58	2,09	7,37
parents work far away	22	4,59	3,14	1,68	1,18	1,73	2,32	14,64	1,05	1,55	1,39	1,68	1,64	1,99	6,36
part-time job	72	4,62	3,32	2,53	1,61	2,21	2,75	17,00	1,07	1,55	1,59	2,27	2,16	2,24	7,70
interpreting	6	5,00	3,29	2,14	1,33	2,67	3,33	17,67	1,15	1,38	1,57	1,03	2,07	1,86	6,22
parents can't do themselves	52	4,95	3,47	2,36	2,06	2,87	3,38	19,15	1,02	1,36	1,52	2,17	2,07	2,24	7,09
caring for siblings															
because parents work	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

*Colours are scaled, where green means the lowest value, yellow is median and red is the highest value.

** Where $N < 5$, M and SD were not calculated.

In Slovenia, participants carry out the highest amount of domestic activities, followed by household management, regardless of their situation. Results on MACA-YC-18 are lowest for the Personal and Financial/practical care. We can see, that participants, who do not take care of anybody have the lowest amount of caring activities. They report the highest amount of caring in families, where people who they take care of have a physical disability, life limiting condition or experience a mental illness.

Hierarchical classification



Picture 1. Dendrogram obtained by hierarchical cluster analysis for Slovenian sample (N=254).

Dendrogram shows that on a Slovenian sample MACA items group together. In the first cluster we find all three items on the Personal care subscale, in the second one all three items on the Emotional care subscale. Both groups later link together and join with a Financial and Practical Management subscale item ("Interpret"). These items then do not link with other until the highest level of the analysis.

Sibling care items link together with a caring situation item, where the person is caring for siblings. The other two Financial and Practical Management subscale items link with an item "I work (part-time) in order to help my family". Domestic chore and Household management subscale items group together with an item "I do a lot of things in my household because I want to do it myself". All three groups later join together.

In the other major clusters of variables we find people that participants care for on the one hand and reasons for caring on the other. It seems that hierarchical clustering of variables on the Slovenian sample reflects the three sets of items in the questionnaire (MACA, people they care for, reasons for caring).

MACA Dimensions

The Kaiser-Meyer-Olkin measure confirmed the sampling adequacy ($N = 331$, $KMO = 0.84$), but KMO values for individual items were not all greater than 0.5, which could indicate instability of the solution of EFA. The majority of items is asymmetrically distributed. Bartlett's test of sphericity ($\chi^2(153) = 2560$, $p < 0.001$) indicated that correlations between items were sufficiently large for EFA.

Four factors had eigen values greater than 1 and in combination explained 58 % of the variance. The scree plot indicated a solution with 4 factors as well. In table 16 the factor loadings after rotation (direct oblimin) are shown (pattern matrix). Analysis of residuals between observed and reproduced correlations showed a good fit of the model to data. There were 15 (9.0 %) non-redundant residuals with absolute values greater than 0.05. Nevertheless, the factors seem unstable, because not all of them have 4 or more items loading higher than 0.6.

The first factor seems to represent the tasks with the most burden for a YC (personal and emotional care items combined), the second represents sibling care, the third domestic activities and the fourth has only two items related to financial help to the family. Two items did not load sufficiently on any factor.

Table 17. Summary of exploratory factor analysis with direct oblimin rotation on MACA-YC18 (*N* = 331).

	1	2	3	4
MACA: Clean your own bedroom.	0.08	0.06	0.50	-0.06
MACA: Clean other rooms.	-0.05	-0.02	0.82	-0.02
MACA: Wash up dishes or put dishes in a dishwasher.	-0.04	-0.04	0.47	0.09
MACA: Decorate rooms.	0.06	0.02	0.20	0.29
MACA: Take responsibility for shopping for food.	0.00	-0.03	0.08	0.51
MACA: Help with lifting or carrying heavy things.	0.12	0.08	0.08	0.25
MACA: Help with financial matters such as dealing with bills, banking money, collecting benefits.	-0.06	0.04	-0.06	0.62
MACA: Work part-time to bring money in.	0.13	0.09	0.16	0.27
MACA: Interpret, sign, or use another communication system for the person you care for.	0.29	0.08	-0.08	0.26
MACA: Help the person you care for to dress or undress.	0.93	-0.03	0.05	-0.12
MACA: Help the person you care for to have a wash.	0.96	-0.03	-0.02	-0.11
MACA: Help the person you care for to have a bath or shower.	0.87	-0.06	-0.01	-0.08
MACA: Keep the person you care for company e.g., sitting with them, reading to them, talking to them.	0.64	0.07	0.04	0.07
MACA: Keep an eye on the person you care for to make sure they are alright.	0.77	0.04	0.03	0.10
MACA: Take the person you care for out e.g., for a walk or to see friends or relatives.	0.55	0.05	-0.02	0.28
MACA: Take brothers and sisters to school (or pick them up).	-0.05	0.68	0.00	0.13
MACA: Look after brothers or sisters whilst another adult is near by.	0.01	0.87	-0.01	-0.02
MACA: Look after brothers or sisters on your own.	-0.02	0.91	0.01	-0.14

Note: Factor loadings greater than 0.40 appear in bold.

Table 18. Correlations between factors.

	2	3	4
1	0.30	0.25	0.36
2		0.20	0.37
3			0.36

In table 17 the correlations between components are shown. They are low to moderate, component 4 correlates the highest with other components.

Sweden

Table 19. Means and standard deviations on MACA-YC18 by presence of a situation in Swedish sample.

		<i>N</i>	<i>M</i>						<i>SD</i>							
			Domestic	Household	Financial	Personal	Emotional	Sibling	Total	Domestic	Household	Financial	Personal	Emotional	Sibling	Total
Providing help to...																
mother	26	3,74	3,04	0,50	0,50	0,79	1,00	9,54	1,38	1,35	0,96	1,35	1,62	1,31	5,19	
step mother	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
father	23	3,42	2,96	0,40	0,21	0,56	1,08	8,65	1,41	1,24	0,87	0,66	1,23	1,35	4,02	
step father	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
(step) brothers	7	3,38	3,22	0,22	0,44	0,89	1,22	9,29	1,30	1,20	0,67	1,01	1,36	1,39	3,30	
(step) sisters	10	3,40	2,90	0,40	0,45	0,30	2,00	9,20	1,65	1,29	0,84	0,93	0,67	2,00	4,96	
grandparents	5	4,80	4,20	0,60	1,40	2,60	0,80	14,40	0,84	1,30	1,34	2,61	2,61	0,84	7,30	
other adult relative	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
family friend	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
other	10	4,30	3,45	1,09	1,82	2,36	1,27	14,70	0,95	1,51	1,30	2,71	2,38	2,00	7,35	
nobody	19	4,32	3,26	1,16	0,21	0,11	0,37	9,42	1,38	1,63	1,54	0,92	0,32	0,83	4,05	
Caring situations																
addiction	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ageing	5	3,80	3,20	1,00	2,60	2,60	1,00	14,20	0,84	1,79	1,41	3,13	2,61	1,00	7,98	
psychological problems	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
physiological problems	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
long-term health issues	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
physical disability	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
learning disability	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
life limiting condition	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
mental health illness	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
brothers/sisters	8	3,62	2,88	0,88	0,50	0,88	2,50	11,25	1,51	0,83	1,25	1,07	1,25	1,85	5,44	
not ill	20	3,80	2,65	0,65	0,40	0,80	1,15	9,45	1,40	1,31	0,99	1,35	1,67	1,69	5,61	

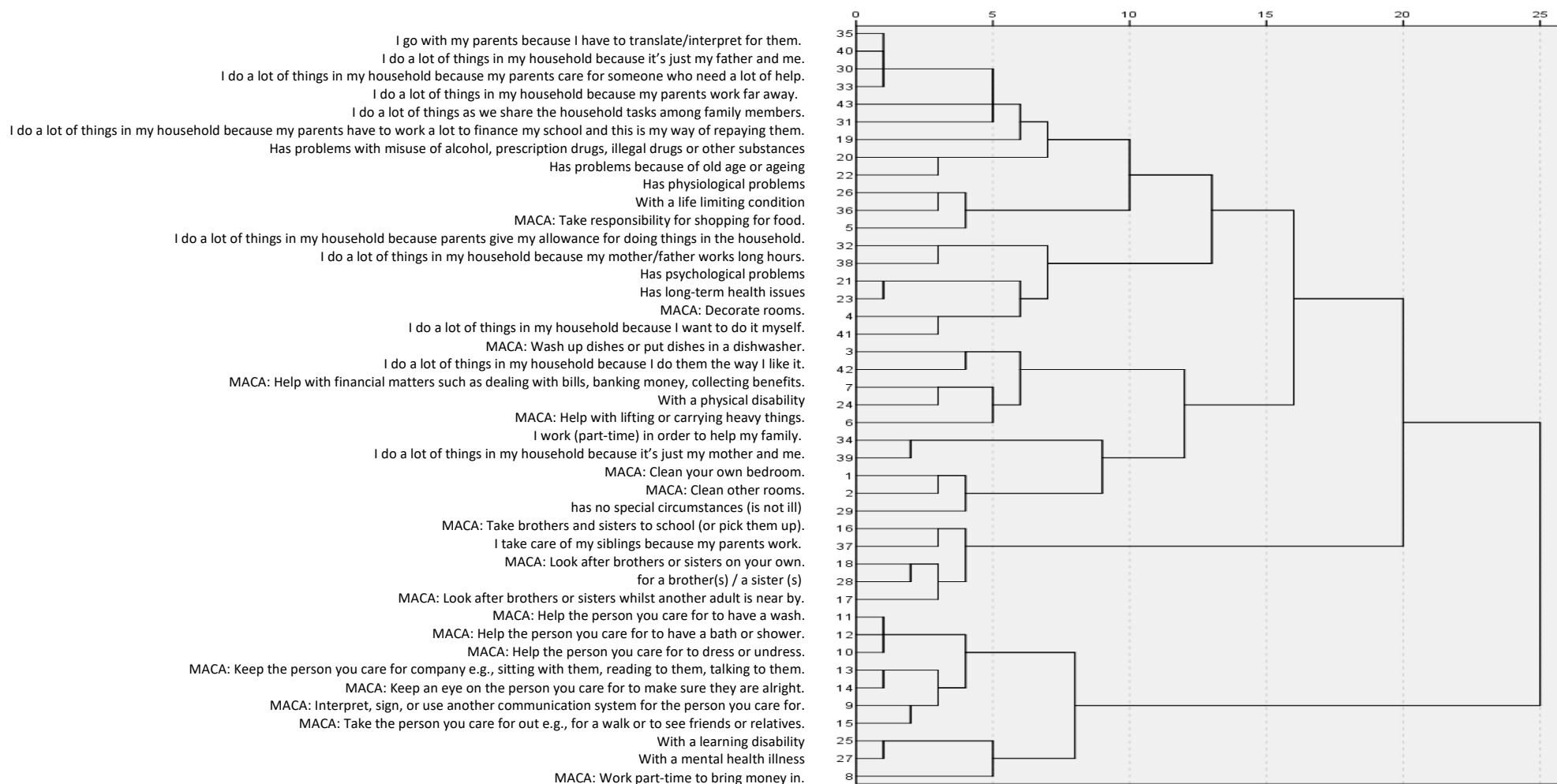
LGBT	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
travelers	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
rural	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ethnic minority	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reasons for caring																
parents working long hours	10	4,20	3,55	0,82	0,64	1,00	0,45	10,70	1,23	1,37	1,08	1,80	2,05	0,93	6,38	
alone with mother	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alone with father	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
want to do it	15	4,60	4,12	1,06	1,19	1,06	0,50	12,67	1,24	1,36	1,57	2,40	2,08	0,82	6,40	
to do it my way	6	5,17	4,17	1,83	1,67	1,83	0,00	14,67	1,17	1,60	1,72	2,66	2,40	0,00	5,96	
sharing tasks	26	4,15	3,19	0,59	0,78	1,19	1,04	10,96	1,29	1,14	1,01	1,91	1,90	1,53	5,71	
parents care for someone	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
repaying parents	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
allowance	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
parents work far away	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
part-time job	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
interpreting	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
parents can't do themselves	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
caring for siblings																
because parents work	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

*Colours are scaled, where green means the lowest value, yellow is median and red is the highest value.

** Where $N < 5$, M and SD were not calculated.

In Sweden it also seems that domestic activities and household management are the most common tasks, regardless of the situation. If respondents answered, that they take care of their grandparents or “other”, because of ageing problems, it results in higher amounts of personal and emotional care. Taking care of nobody results in higher financial or practical care, which probably means that they have time to do a part time job. A lot of caring activities is also present where participants want to do it the way they like it.

Hierarchical Classification



Picture 2. Dendrogram obtained by hierarchical cluster analysis for Swedish sample (N=23).

Hierarchical classification on a Swedish sample indicated three major clusters. Personal and Emotional care on the MACA scale are linked with Financial and Practical Management as well as with caring for someone that has a learning disability or mental health illness. Siblings care is grouped with caring for brothers and/ or sisters and taking care of siblings because parents work.

The major cluster is comprised of Domestic care, Household and Practical Management and items describing caring situation. Cleaning rooms is linked with caring for someone that has no special circumstances, working (part-time) is linked with living with just their mother, caring for someone with physical disability is linked with helping with lifting or carrying heavy things and helping with financial matters (on MACA). Translating/ interpreting for parents, living with just a father, parents caring for someone who need a lot of help and parents working far away are also situations that are linked.

MACA Dimensions

In the analysis we had to exclude two items, because items “Help the person you care for to have a wash” and “Help the person you care for to have a bath or shower” were in perfect correlation ($r = 1$) and items “Keep the person you care for company e.g., sitting with them, reading to them, talking to them” and “Keep an eye on the person you care for to make sure they are alright” were in a very high correlation ($r = 0.89$).

The Kaiser-Meyer-Olkin measure then confirmed the sampling adequacy ($N = 57$, $KMO = 0.64$), but KMO values for individual items were in majority not greater than 0.5, which could indicate instability of the solution of EFA. Bartlett’s test of sphericity ($\chi^2(120) = 416$, $p < 0.001$) indicated that correlations between items were sufficiently large for EFA.

Four factors had eigenvalues greater than 1 and in combination explained 65 % of the variance. The scree plot indicated a solution with 4 factors as well. In table 18 the factor loadings after rotation (direct oblimin) are shown (pattern matrix). Analysis of residuals between observed and reproduced correlations showed a reasonable fit of the model to data. There were 33 (27.0 %) non-redundant residuals with absolute values greater than 0.05. Nevertheless, the factors seem unstable, because not all of them have 4 or more items loading higher than 0.6.

Like in the Slovenian sample, the first factor seems to represent the personal and emotional care items combined, the second represents domestic activities and household management, the third sibling care and the fourth is related to financial help to the family.

Table 20. Summary of exploratory factor analysis with direct oblimin rotation on MACA-YC18 (*N* = 57).

	1	2	3	4
MACA: Clean your own bedroom.	0.08	0.70	-0.07	0.16
MACA: Clean other rooms.	-0.04	0.71	0.06	-0.07
MACA: Wash up dishes or put dishes in a dishwasher.	-0.09	0.47	0.04	-0.14
MACA: Decorate rooms.	0.19	0.41	0.15	-0.12
MACA: Take responsibility for shopping for food.	0.07	0.13	-0.11	-0.53
MACA: Help with lifting or carrying heavy things.	-0.05	0.44	-0.03	-0.08
MACA: Help with financial matters such as dealing with bills, banking money, collecting benefits.	-0.03	-0.01	0.10	-0.89
MACA: Work part-time to bring money in.	0.11	0.23	-0.08	-0.50
MACA: Interpret, sign, or use another communication system for the person you care for.	0.66	0.14	-0.02	0.09
MACA: Help the person you care for to dress or undress.	0.79	-0.16	0.10	-0.22
MACA: Help the person you care for to have a wash.	0.76	-0.04	-0.04	-0.25
MACA: Keep the person you care for company e.g., sitting with them, reading to them, talking to them.	0.91	-0.09	0.05	-0.02
MACA: Take the person you care for out e.g., for a walk or to see friends or relatives.	0.84	0.09	-0.05	0.20
MACA: Take brothers and sisters to school (or pick them up).	0.09	0.05	0.61	0.04
MACA: Look after brothers or sisters whilst another adult is near by.	-0.01	0.01	0.83	-0.04
MACA: Look after brothers or sisters on your own.	-0.09	-0.04	0.93	0.06

Note: Factor loadings greater than 0.40 appear in bold.

Table 21. Correlations between factors.

	2	3	4
1	0.20	0.10	-0.19
2		-0.02	-0.40
3			-0.06

In table 19 the correlations between components are shown. They are low to moderate, component 4 correlates the highest with other components.

Italy

Table 22. Means and standard deviations on MACA-YC18 by presence of a situation in Italian sample.

		<i>N</i>	<i>M</i>						<i>SD</i>							
			Domestic	Household	Financial	Personal	Emotional	Sibling	Total	Domestic	Household	Financial	Personal	Emotional	Sibling	Total
Providing help to...																
mother	13	3,86	3,21	0,71	0,85	3,36	0,50	12,85	1,23	1,05	0,91	1,46	2,13	1,16	3,44	
step mother	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
father	11	3,75	2,75	0,83	0,27	3,75	0,50	12,27	1,42	0,87	0,94	0,47	2,09	1,24	4,24	
step father	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
(step) brothers	11	4,00	2,91	0,45	0,27	3,27	2,91	13,82	1,26	0,94	0,69	0,47	1,49	1,87	3,52	
(step) sisters	10	3,30	2,90	0,40	1,20	3,10	1,90	12,80	1,06	1,37	0,52	1,55	1,66	1,66	3,68	
grandparents	14	3,71	2,79	0,36	0,43	3,36	1,50	12,14	1,27	0,70	0,50	0,51	2,10	1,56	3,48	
other adult relative	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
family friend	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
other	8	4,50	3,00	0,50	0,38	4,00	1,38	13,75	0,93	0,53	0,53	0,52	2,00	1,69	3,45	
nobody	7	3,43	2,71	0,29	0,00	1,14	0,43	8,00	1,81	1,70	0,76	0,00	1,86	0,79	3,65	
Caring situations																
addiction	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ageing	14	3,64	2,86	0,64	0,50	3,21	1,43	12,29	1,39	0,86	0,74	0,52	2,04	1,60	3,38	
psychological problems	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
physiological problems	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
long-term health issues	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
physical disability	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
learning disability	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
life limiting condition	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
mental health illness	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
brothers/sisters	17	3,65	2,76	0,41	0,65	3,35	2,59	13,41	1,22	1,09	0,62	1,00	1,54	1,73	3,37	
not ill	26	3,78	2,81	0,41	0,31	2,85	1,33	11,65	1,09	1,08	0,75	0,84	2,05	1,80	4,11	

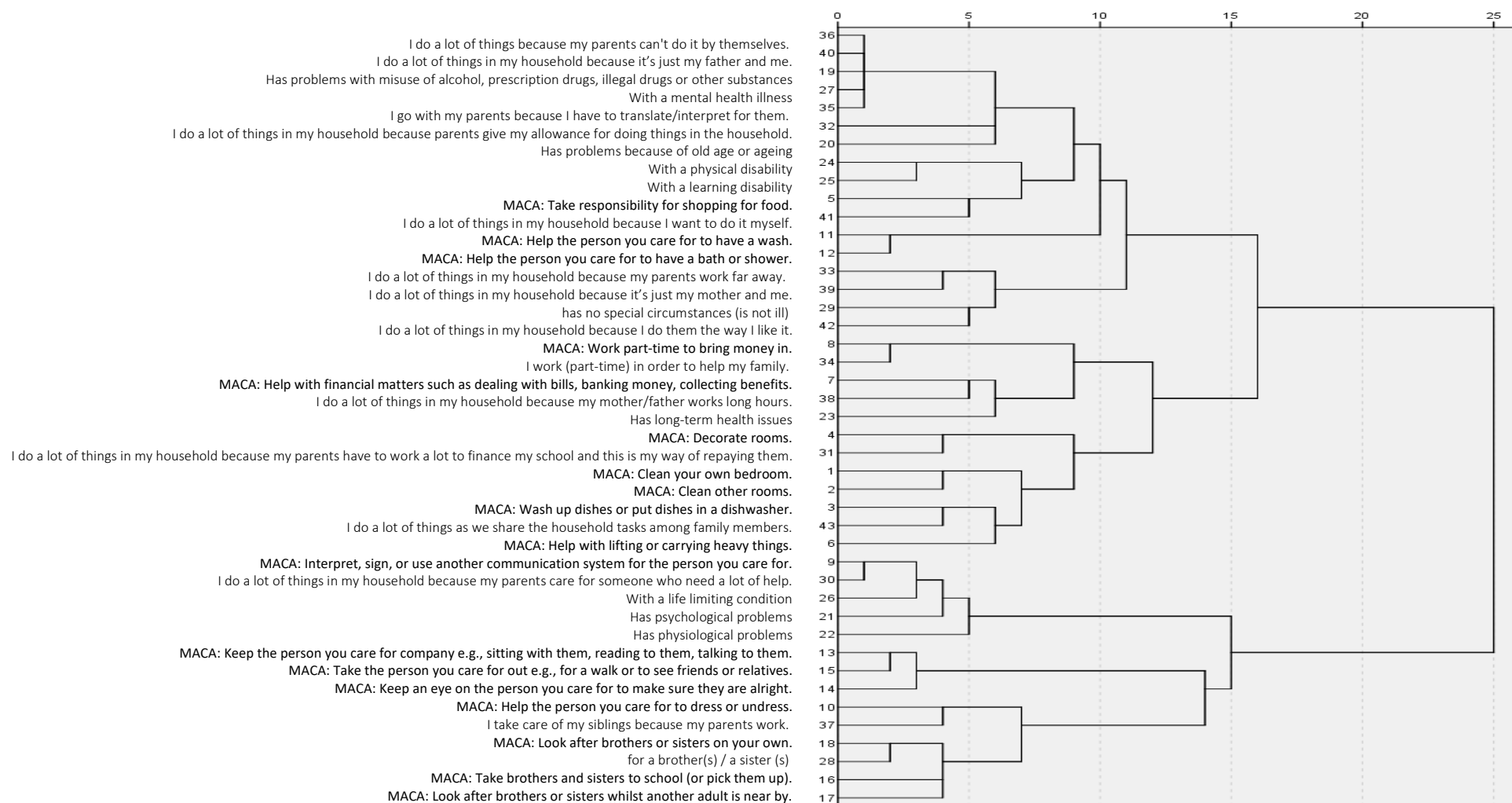
LGBT	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
travelers	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
rural	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ethnic minority	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reasons for caring																
parents working long hours	16	4,06	3,19	0,62	0,19	2,69	1,25	12,00	1,06	1,05	0,96	0,40	2,09	1,53	3,10	
alone with mother	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
alone with father	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
want to do it	8	3,25	2,88	0,38	0,12	3,00	0,75	10,38	0,89	0,64	0,52	0,35	1,85	1,16	2,72	
to do it my way	6	4,17	3,33	0,50	0,17	3,33	0,50	12,00	1,17	0,82	0,55	0,41	2,80	1,22	3,63	
sharing tasks	13	4,31	2,85	0,54	0,31	3,23	1,77	13,00	1,18	0,69	0,66	0,48	2,01	1,92	3,92	
parents care for someone	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
repaying parents	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
allowance	6	3,33	2,17	0,17	0,17	2,50	1,50	9,83	1,21	0,75	0,41	0,41	2,07	1,52	5,42	
parents work far away	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
part-time job	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
interpreting	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
parents can't do themselves	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
caring for siblings because parents work	6	3,33	2,50	0,33	1,00	3,50	3,33	14,00	1,21	1,05	0,52	0,00	1,64	1,75	4,47	

*Colours are scaled, where green means the lowest value, yellow is median and red is the highest value.

** Where $N < 5$, M and SD were not calculated.

It is interesting that in Italy the domestic tasks are followed by emotional care if respondents take care of someone. Only when they take care of nobody the amount of emotional care is also low. In the Italian sample, the lowest scores are on Financial/practical and Personal care scales. In Italy the highest amount of total caring activities is reported, if the respondents take care of their siblings.

Hierarchical Classification



Picture 3. Dendrogram obtained by hierarchical cluster analysis for Italian sample (N=33).

Two main clusters could be observed on an Italian sample. Sibling care is linked with caring for brothers and sisters because parents work and helping person with dressing and undressing. These items later group with Emotional care, followed by a group of items that link caring for someone with physiological problems, psychological problems, a life limiting condition and parents caring for someone that needs a lot of help as well as with interpreting for a person they care for.

The other main cluster is comprised of two sub-clusters. In one of them, Domestic care items are linked with sharing household tasks on the one hand and Financial Management items are linked with working (part-time), parents working long hours and caring for someone with long-term health issues. In the other sub-cluster, we can observe grouping of items describing situation where participants care for someone with a mental health illness, problems with substance misuse, living with just a father and doing things because parents are not able to it by themselves.

MACA Dimensions

The Kaiser-Meyer-Olkin measure confirmed the sampling adequacy ($N = 41$, $KMO = 0.53$), the KMO value is just above the acceptable limit, but KMO values for individual items were in the majority not greater than 0.5, which could indicate instability of the solution of PCA. Bartlett's test of sphericity ($\chi^2(153) = 318$, $p < 0.001$) indicated that correlations between items were sufficiently large for PCA.

Six components had eigenvalues greater than 1 and in combination explained 73 % of the variance. The scree plot indicated a solution with 7 components. We decided for a 4 components solution, because the component structure was clearest. It is also important to note that with this solution all of the components had at least 3 loadings higher than 0.6, which indicates a stable solution. In total we have explained 58% of variance. In table 20 the factor loadings after rotation (varimax) are shown.

In the Italian sample, the personal and emotional care seemed to be separated components, combined with some items of household management and financial/practical care. The third component represents domestic activities and the fourth sibling care. Two items did not load sufficiently on any factor.

Table 23. Summary of principal components analysis with varimax rotation on MACA-YC18 (*N* = 41).

	1	2	3	4
MACA: Clean your own bedroom.	-0.13	-0.07	0.79	0.00
MACA: Clean other rooms.	0.05	0.03	0.77	0.05
MACA: Wash up dishes or put dishes in a dishwasher.	0.36	-0.03	0.51	0.21
MACA: Decorate rooms.	0.01	-0.07	0.68	-0.01
MACA: Take responsibility for shopping for food.	0.56	0.34	-0.03	-0.15
MACA: Help with lifting or carrying heavy things.	0.42	0.00	0.30	-0.05
MACA: Help with financial matters such as dealing with bills, banking money, collecting benefits.	-0.15	0.61	0.31	-0.36
MACA: Work part-time to bring money in.	-0.06	0.24	0.23	0.03
MACA: Interpret, sign, or use another communication system for the person you care for.	0.18	0.16	-0.24	0.23
MACA: Help the person you care for to dress or undress.	0.81	-0.03	-0.07	0.30
MACA: Help the person you care for to have a wash.	0.92	-0.10	-0.01	-0.14
MACA: Help the person you care for to have a bath or shower.	0.80	-0.21	-0.10	-0.10
MACA: Keep the person you care for company e.g., sitting with them, reading to them, talking to them.	0.08	0.83	-0.26	0.24
MACA: Keep an eye on the person you care for to make sure they are alright.	0.11	0.85	0.00	0.13
MACA: Take the person you care for out e.g., for a walk or to see friends or relatives.	-0.20	0.80	-0.18	0.13
MACA: Take brothers and sisters to school (or pick them up).	-0.05	-0.03	0.22	0.72
MACA: Look after brothers or sisters whilst another adult is near by.	-0.01	0.10	0.06	0.85
MACA: Look after brothers or sisters on your own.	-0.10	0.20	-0.10	0.79

Note: Factor loadings greater than 0.40 appear in bold.

The components were not in correlation in the Italian sample.

Portugal

Table 24. Means and standard deviations on MACA-YC18 by presence of a situation in Portuguese sample.

		<i>N</i>	<i>M</i>							<i>SD</i>						
			Domestic	Household	Financial	Personal	Emotional	Sibling	Total	Domestic	Household	Financial	Personal	Emotional	Sibling	Total
Providing help to...																
mother	17	3,94	2,39	1,11	0,83	2,17	0,94	10,47	1,70	1,24	1,53	1,92	2,41	1,64	6,27	
step mother	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
father	12	3,92	2,33	0,75	0,67	2,50	0,83	11,00	1,73	1,44	0,87	1,72	2,61	1,64	7,24	
step father	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
(step) brothers	5	3,80	2,60	0,60	1,60	2,60	2,40	13,60	1,92	1,52	0,89	2,51	2,79	2,30	10,33	
(step) sisters	8	3,38	2,25	0,88	0,12	1,25	1,75	9,62	1,30	0,46	0,99	0,35	1,58	1,58	3,02	
grandparents	8	4,89	2,78	1,33	2,44	4,00	1,50	15,62	0,93	1,72	1,94	2,74	1,58	2,14	6,82	
other adult relative	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
family friend	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
other	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
nobody	23	3,58	2,21	0,96	0,46	1,25	1,04	9,35	1,38	1,53	1,46	1,38	2,03	1,69	7,05	
Caring situations																
addiction	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ageing	9	4,70	2,60	1,80	2,00	3,30	1,67	14,78	0,82	2,01	2,35	2,79	1,77	2,24	9,09	
psychological problems	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
physiological problems	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
long-term health issues	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
physical disability	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
learning disability	8	4,12	2,62	1,75	1,12	2,62	2,88	15,12	1,81	1,69	1,83	2,03	1,77	2,17	9,00	
life limiting condition	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
mental health illness	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
brothers/sisters	8	2,88	2,38	0,75	1,00	2,00	2,50	11,50	1,36	0,74	1,04	2,07	1,51	1,41	4,41	
not ill	20	3,60	2,50	0,95	0,90	2,50	1,00	11,45	1,76	1,32	1,54	1,89	2,37	1,69	7,11	

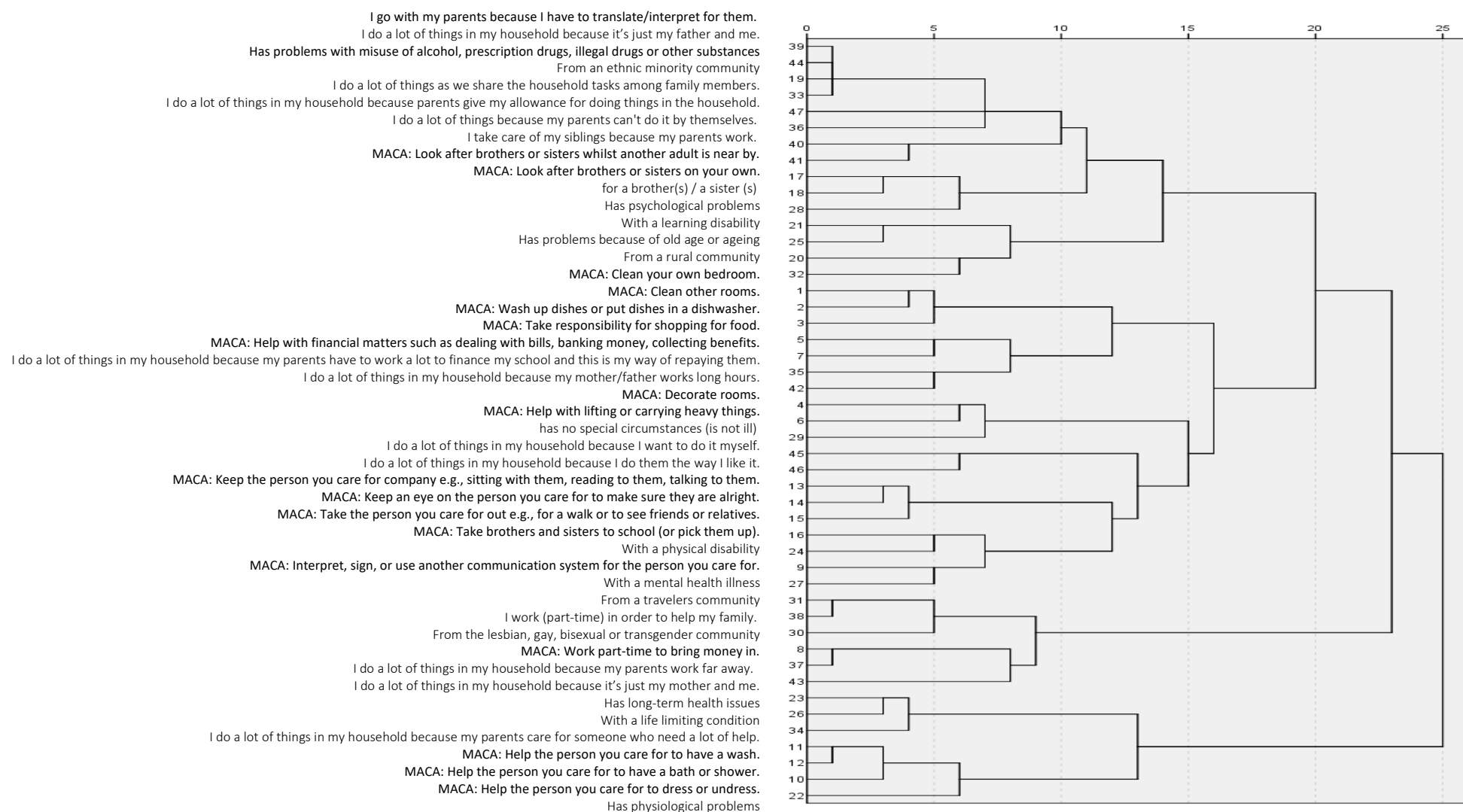
LGBT	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
travelers	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
rural	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ethnic minority	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reasons for caring																
parents working long hours	28	3,97	2,45	0,97	0,48	1,59	1,07	10,43	1,52	1,27	1,35	1,21	2,08	1,63	6,45	
alone with mother	9	4,30	2,60	1,80	1,90	2,70	1,56	13,44	1,42	1,71	2,39	2,85	2,26	2,01	9,44	
alone with father	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
want to do it	12	3,25	1,67	0,92	0,33	2,75	1,58	10,50	1,48	0,78	1,16	0,89	2,38	1,51	4,38	
to do it my way	20	3,65	2,05	1,05	0,85	2,10	1,45	11,15	1,50	1,19	0,83	1,90	2,36	1,67	6,18	
sharing tasks	25	3,76	1,88	0,44	0,48	1,60	1,40	9,56	1,42	1,05	0,71	1,26	1,87	1,55	4,08	
parents care for someone	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
repaying parents	14	4,60	2,73	1,27	1,27	3,33	1,79	15,07	1,40	1,49	1,62	2,05	2,06	2,04	8,12	
allowance	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
parents work far away	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
part-time job	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
interpreting	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
parents can't do themselves	8	3,75	2,50	1,38	0,00	1,75	1,25	10,62	1,16	0,93	1,06	0,00	1,49	1,39	3,70	
caring for siblings																
because parents work	8	3,62	2,12	1,25	0,25	2,88	2,62	12,75	1,30	0,83	1,28	0,46	0,64	1,06	2,31	

*Colours are scaled, where green means the lowest value, yellow is median and red is the highest value.

** Where $N < 5$, M and SD were not calculated.

In Portugal a similar trend as in Italy is observed. Also here the amount of emotional care is quite high. The highest amount of total caring activities is reported if respondents take care of their siblings or grandparents with ageing or learning disabilities problems. Caring for brothers results in higher average total score than caring for sisters. An important reason for a high amount of caring activities is also repaying parents, because they have to work a lot to pay for their education. The lowest amount of caring activities is observed if they do not take care of anybody or if family members share tasks.

Hierarchical Classification



Picture 4. Dendrogram obtained by hierarchical cluster analysis for Italian sample (N=32).

Dendrogram for the Portuguese sample shows several smaller clusters. Personal care is linked with caring for someone who has physiological problems. Doing a lot of things in the household because parents care for someone who needs a lot of help and caring for someone with a lifetime condition or long-term health issues are situations that also link together. In the other cluster we find working part-time, having parents that work far away or living with just a mother. Interestingly, these items group with caring for someone from travellers or LGBT community (probably due to small number of participants that identified with this situation).

MACA Emotional care items are linked together, while taking siblings to school (Siblings care) is linked with caring for someone who has a physical disability. Domestic chores are joined with some aspects of Household and Financial management, as well as with parents working long hours or repaying parents for financial support.

Caring for someone with aging problems or for someone from a rural community are linked together as well as caring for someone with psychological problems or with a learning disability. Siblings care later joins items describing sharing household tasks, being given allowance for helping in the household and doing things because parents can't do it by themselves. Similarly to the observation in the previous sample, interpreting, living with just a father and caring for someone with substance misuse problem are situations that link together.

MACA Dimensions

As in the Swedish sample we had to exclude one item in the Portuguese sample as well, because items "Help the person you care for to have a wash" and "Help the person you care for to have a bath or shower" were in perfect correlation ($r = 1$). Items "Keep the person you care for company e.g., sitting with them, reading to them, talking to them" and "Keep an eye on the person you care for to make sure they are alright" were in a high correlation ($r = 0.81$) as well, but we decided to keep them both, as the correlation is not as high as in the Swedish sample.

The Kaiser-Meyer-Olkin measure then confirmed the sampling adequacy ($N = 55$, $KMO = 0.70$), but KMO values for individual items were in majority not greater than 0.5, which could indicate instability of the solution of EFA. Bartlett's test of sphericity ($\chi^2(136) = 435$, $p < 0.001$) indicated that correlations between items were sufficiently large for EFA.

Five factors had eigenvalues greater than 1 and in combination explained 69 % of the variance. The scree plot indicated a solution with 4 or 2 factors. We decided to keep the 4 factors, because they explained 62% of variance, compared to only 43%, that would be explained with 2 factors. In table 18 the factor loadings after rotation (direct oblimin) are shown (pattern matrix). Analysis of residuals between observed and reproduced correlations showed a reasonable fit of the model to data. There were 55 (40.0 %) non-redundant residuals with absolute values greater than 0.05. Nevertheless, the factors seem unstable, because not all of them have 4 or more items loading higher than 0.6.

Like in the Slovenian and Swedish samples the first factor seems to represent the personal and emotional care items combined, the second represents domestic activities and the third sibling care. The fourth factor is a bit different, it is a combination of two items of household management and working part time. Two items did not load sufficiently on any factor.

Table 25. Summary of exploratory factor analysis with direct oblimin rotation on MACA-YC18 (*N* = 55).

	1	2	3	4
MACA: Clean your own bedroom.	0.08	0.84	-0.01	-0.12
MACA: Clean other rooms.	0.12	0.70	-0.01	0.13
MACA: Wash up dishes or put dishes in a dishwasher.	-0.08	0.54	0.04	0.05
MACA: Decorate rooms.	0.06	0.12	0.01	0.42
MACA: Take responsibility for shopping for food.	0.35	0.17	0.17	0.14
MACA: Help with lifting or carrying heavy things.	0.07	-0.17	-0.32	0.82
MACA: Help with financial matters such as dealing with bills, banking money, collecting benefits.	0.14	0.06	0.09	0.26
MACA: Work part-time to bring money in.	-0.14	0.07	0.26	0.41
MACA: Interpret, sign, or use another communication system for the person you care for.	0.44	-0.17	0.15	0.23
MACA: Help the person you care for to dress or undress.	0.75	-0.16	0.04	0.16
MACA: Help the person you care for to have a wash.	0.57	-0.18	0.19	0.21
MACA: Keep the person you care for company e.g., sitting with them, reading to them, talking to them.	0.85	0.00	0.04	-0.11
MACA: Keep an eye on the person you care for to make sure they are alright.	0.85	0.15	0.03	-0.16
MACA: Take the person you care for out e.g., for a walk or to see friends or relatives.	0.77	0.29	-0.10	0.00
MACA: Take brothers and sisters to school (or pick them up).	0.07	0.20	0.57	-0.01
MACA: Look after brothers or sisters whilst another adult is near by.	0.18	-0.11	0.78	-0.11
MACA: Look after brothers or sisters on your own.	-0.01	-0.02	0.90	0.03

Note: Factor loadings greater than 0.40 appear in bold.

Table 26. Correlations between factors.

	2	3	4
1	0.14	0.36	0.26
2		0.21	0.03
3			0.24

In table 23 the correlations between components are shown. They are low to moderate, component 1 correlates the highest with other components.