



Sociodemographic and mental health characteristics of children who use mental health care for specific reasons

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ABSTRACT

Purpose: In this study, we aimed to identify for what reasons children receive mental health care and what sociodemographic and mental health characteristics are associated with these specific reasons.

Methods: This study investigated 777 children who consulted a psychologist/psychiatrist between 9 and 13 years old. Data were retrieved from the Generation R Study, a population-based cohort in Rotterdam, the Netherlands. Sociodemographic and mental health characteristics were measured between birth and 13 years old. Logistic regression analyses were used to study the characteristics that were associated with eight parent-reported reasons for mental health care use.

Results: Behavioural problems were most often mentioned as reason for mental health care use (36%), followed by life events and family problems (15%) and emotional problems (15%). Several sociodemographic and mental health characteristics were associated with some of the reasons for care use. Sex was most frequently associated with the reasons for care use. Life events and family problems as reason for care use were associated with most sociodemographic characteristics, e.g. migrant origin and family situation. No associations were found for the children using mental health care for social problems, physical problems, cognitive developmental problems and other problems.

Conclusion: Distinctive profiles of sociodemographic characteristics were found for some reasons for care use, while for other reasons no associations were found with sociodemographic or mental health characteristics. Implications of these findings and suggestions for future research are discussed. In conclusion, this study provides some insights into the profiles of care users, but still many questions remain.

About 10–15% of children in Western countries under the age of 18 years receive mental health care (Lempinen, Luntamo, & Sourander, 2018; Olsson, Druss, & Marcus, 2015; Statistics Netherlands, 2020). These children receive care for various reasons. According to a study by Pedrini et al. (2012), 0–17 years olds in Italy receive mental health services most often for communication disorders and learning disabilities. A study by Fitzpatrick et al. (2011) shows that 12–15-year-old adolescents in Ireland use mental health services most often for behavioural disorders, anxiety disorders and affective disorders. To improve the quality of care, it is important to understand not only what diagnoses children receive care for, but also which children are using care for what

mental health problems. Currently, such information on the characteristics of children who use mental health care for specific reasons is scarce.

So far, the sociodemographic and mental health characteristics only seem available for children using care in psychiatric hospitals. A study by Møller, Sørensen, and Thomsen (2007) showed that 0–15-year-old children in Denmark receive psychiatric care most often for pervasive development disorders, adjustment disorders and conduct disorders. Additionally, they found that boys were more often diagnosed with development disorders and behavioural disorders, and girls were more often diagnosed with adjustment disorders, eating disorders, affective

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disorders and anxiety disorders. Furthermore, [Sourander and Turunen \(1999\)](#) found, among children and adolescents using psychiatric hospital care, that this care was most often used for adjustment disorders, but that the diagnostic profiles differed largely per age and sex group.

Gaining more insight into characteristics related to the reasons of children's mental health care use might help to improve quality of care and prevention strategies. Important aspects of high quality mental health care are that care should be easily accessible, inclusive, people-centred and safe ([Follwell, Chunduri, Samuelson-Kiraly, Watters, & Mitchell, 2021](#)). Therefore, tailoring care better to its users can improve the quality of care. For example, people with a minority background often feel misunderstood in the current mental health system ([Memon et al., 2016](#)). Knowledge on the reasons for which these groups most frequently obtain care provides possibilities to make these services more accessible, to tailor specific types of care to its users and to deploy specialised professionals. Furthermore, developing prevention strategies based on the prevalence of mental health problems in the population might not always be the most effective and efficient strategy as some problems will diminish throughout childhood without mental health care use ([Plass-Christl et al., 2018; Veldman, Reijneveld, Ortiz, Verhulst, & Bültmann, 2015](#)). Moreover, insight into the characteristics of the children that use care for specific diagnoses can serve as a baseline measurement. Studying the children's characteristics and reasons for care makes it possible to see whether these characteristics and reasons change over time and, consecutively, the mental health care system can adapt to these changes. This was previously done for psychiatric hospital care ([Case, Olfson, Marcus, & Siegel, 2007](#)).

In the Netherlands, children's mental health care consists of different types of mental health care services as well as youth and parenting support services. It includes non-residential and residential care ([Statistics Netherlands, 2021](#)). Non-residential care includes ambulatory care, community-based support and day treatment. Residential care includes, among others, foster care and admission into a residential unit. About one in ten children that use mental health care, receives residential care ([Statistics Netherlands, 2019](#)).

Two research questions were formulated. The first research question is: What reasons do parents report for the mental health care their child received between ages 9 and 13 years old? We hypothesise, based on [Fitzpatrick et al. \(2011\)](#), that behavioural and anxiety problems will be mentioned most frequently. The second research question is: What sociodemographic characteristics and mental health problems are associated with the specific parent-reported reasons for mental health care use? We hypothesise that boys will use more care for externalising problems and that girls will use more care for internalising problems ([Møller et al., 2007](#)). On other sociodemographic characteristics, no literature is available, so our analyses will be exploratory. Furthermore, we hypothesise that the mental health problems will be in line with the corresponding reasons for care use.

1. Methods

1.1. Study design and population

The Generation R Study is a prospective, population-based, multi-ethnic cohort study in Rotterdam, the Netherlands, that started as a birth cohort between 2002 and 2005. The study was approved by the Medical Ethical Committee of Erasmus Medical Centre, Rotterdam, the Netherlands (MEC 1980.782/2001/31) and conducted according to the World Medical Association Declaration of Helsinki. Written informed consent was obtained from all participants. The outcome data for the current study were collected between 2016 and 2019 when 4,929 participants visited our research centre at 13 years old. For the current study, 4,086 (82.9 %) children without a consult by a psychiatrist or psychologist between the age of 9 and 13 years old (see measures) and 64 (1.3 %) children with missing data were excluded, leaving the 779 children with a consult. Of these children, two had not specified a reason

for consulting a psychologist or psychiatrist, which resulted in a study sample of 777 children.

1.2. Measures

1.2.1. Mental health care

Mental health care use was reported by the accompanying parent at the research centre using the question: 'Did your child consult a psychologist or psychiatrist since the last visit at our research centre four years ago?'. When the parent answered with 'yes', the reason for the consultation was asked in an open question. The open answers were categorised according to the CAP-J, a classification system developed by the Netherlands Youth Institute to categorise the nature of mental health and psychosocial problems ([Netherlands Youth Institute, 2021](#)). The CAP-J consists of five axes: psychosocial functioning, physical health, cognitive development and capabilities, family and upbringing, and youth and environment. Within the axis of psychosocial functioning, the sub axes emotional problems, behavioural problems, social problems and other psychosocial problems were used as the prevalence in these categories was high enough. Life events as reason for consulting a psychologist or psychiatrist could be categorised in more than one axis. As overlap with items of the axis family and upbringing seemed to be highest, these reasons were combined. The resulting category was named life events and family problems. The category 'other' was created for all reasons that could not be classified in one of the categories above, mainly due to non-distinctive reasons. The youth and environment axis of the CAP-J was not mentioned in our sample as a reason for mental health care use. For more details, see [Table 1](#).

1.2.2. Sociodemographic characteristics

Sex was determined based on the medical record that was obtained after birth and categorised as 'boy' and 'girl'. Migrant origin was obtained at the child's age of 5 years via questionnaire and categorised as having a migrant origin and not having a migrant origin. The migrant

Table 1

Categorisation of reasons for mental health consultation based on the CAP-J.

Reason for care use	N ^a	Reason for care use consists of the following reasons mentioned by parents:	N ^a
Psychosocial functioning: Emotional problems	113	Anxiety	80
		Depressive/withdrawn	28
		Suicidality/self-harm	9
Psychosocial functioning: Behavioural problems	277	Aggressive behaviour	19
		Deviant behaviour	25
		Hyperactivity and/or inattention	242
Psychosocial functioning: Social problems	67	Language/speech problems	33
		Social problems	35
Psychosocial functioning: Other psychosocial problems	107	Autism spectrum disorder	69
		Insecurity/low self-image	14
		Obsession and/or compulsion	10
		Stress	8
		Tic disorders	8
Physical problems	67	Eating problems	12
		Pain/physical complaints	49
		Sleeping problems	7
Cognitive developmental problems	59	School/learning problems/IQ test	59
Life events and family problems	120	Attachment problems	5
		Family problems/home situation	29
		Life events	88
Other	108	Other problems: could not be classified in one of the categories above, mainly due to non-distinctive reasons	108

^a The total number of reason mentioned by parents can be more than the reason for care use and the total study sample (N = 777) as parents could specify multiple reasons.

origin is based on the country of birth of the parents and grandparents as all children were born in Rotterdam, the Netherlands, by study design. In case of at least one of the (grand)parents being born outside of the Netherlands, the child was classified as having a migrant origin. The family situation was obtained at the child's age of 13 years via questionnaire. Parents that stated to be married or living together were categorised as a two-parent family, and parents that stated to be single or widowed as a one-parent family. The educational level of both parents was obtained at the child's age of 5 years via questionnaire. Two categories were created based on the highest educational level obtained by both parents, namely high (higher professional education and university degree) and middle/low (no education up to senior general secondary education and secondary vocational education) (Statistics Netherlands, 2017). Income was obtained at the child's age of 9 years via questionnaire. Two categories were created, namely <€2000 (approximating the threshold for a low income in the Netherlands) and ≥€2000 (Statistics Netherlands, 2014, 2018).

1.2.3. Mental health problems

The Child Behavior Checklist/4–18 (CBCL) was filled out by the mothers at the child's age of 9 years old (Achenbach & Rescorla, 2000). The CBCL consists of 113 items scored on a 3-point scale and has good validity and reliability (Achenbach & Rescorla, 2000). The CBCL consists of an internalising and externalising broadband scale, and eight syndrome scales that represent different types of mental health problems: anxious/depressed, withdrawn/depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behaviour and aggressive behaviour. Sample- and gender-specific cut-offs at the 84th (broadband scales) and 93rd percentile (syndrome scales) were applied to all CBCLs filled out at age 9 years within the Generation R Study. Children having a score above this cut-off are seen as having borderline or clinical problems (Achenbach & Rescorla, 2007).

1.2.4. Covariates

Age at outcome was determined based on the date the child visited the research centre.

1.3. Statistical analyses

Missing data on the independent variables were imputed 20 times via multiple imputation using predictive mean matching. Descriptive statistics were used to answer the first research question on the prevalence of the specific reasons for mental health care use. Univariate and multivariable logistic regression analyses were used to study the second research question on the associations of sociodemographic and mental health characteristics with the specific reasons for mental health care use (Field, 2013). Separate analyses were performed per reason for care use: emotional problems, behavioural problems, social problems, other psychosocial problems, physical problems, cognitive developmental problems, life events and family problems, and other problems. The presented odds ratios can be interpreted as follows: the odds that a child with characteristic B has this specific reason for care use compared to the children with characteristic A (reference) is the number presented in the table.

The associations were studied using three models (see Table 2). Each model was repeated for each independent characteristic, i.e. five sociodemographic and ten mental health characteristics, with all eight outcomes. In the first model of the sociodemographic characteristics, univariate analyses were performed. In the second model, the sociodemographic characteristics were adjusted for each other in multivariable analyses. In the third model, the sociodemographic characteristics were additionally adjusted for mother-reported mental health problems. The associations of the mental health problems with the reasons for care use were analysed similarly. In the first model, univariate analyses were performed. In the second model, the mental health problems were adjusted for each other in multivariable analyses. In the third model, the

Table 2
Explanation of the statistical models.

	Sociodemographic characteristic	Mental health characteristic
Model 1 (M1)- Univariate analyses	This model studies the association of a sociodemographic characteristic with the eight reasons for mental health care use in separate analyses, not adjusted for any other variable.	This model studies the association of a mental health characteristic with the eight reasons for mental health care use in separate analyses, not adjusted for any other variable.
Model 2 (M2)- Multivariable analyses	This model studies the association of all sociodemographic characteristics together, adjusted for each other and for the child's age at the outcome. The analyses are repeated for all eight reasons for mental health care use separately.	This model studies the association of all mental health characteristics together, adjusted for each other and for the child's age at the outcome. The analyses are repeated for all eight reasons for mental health care use separately.
Model 3 (M3)- Multivariable analyses	This model studies the association of all sociodemographic and mental health characteristics together, adjusted for each other and for the child's age at the outcome. The analyses are repeated for all eight reasons for mental health care use separately.	

mental health problems were additionally adjusted for the sociodemographic characteristics. The latter model is similar to the third model for sociodemographic characteristics. In all multivariable models, age at outcome was adjusted for. Analyses were performed in SPSS 25, and the significance level was set at 0.05.

1.3.1. Complete case and sensitivity analyses

To identify whether imputing the data influenced the results, complete case analyses on the children without missing data were performed. As a sensitivity analysis, the analyses with the continuous scores of the mental health problems were repeated. Dichotomous scores were used in the main analyses as clinical practice often utilises diagnoses rather than continuous scores. However, dichotomising continuous scores leads to a loss of information (Altman & Royston, 2006).

2. Results

The study sample of 777 children, all using mental health care, consisted of slightly more boys (56 %). Half of the children had a migration origin (50 %). Most children lived in a two-parent family (71 %), had at least one highly educated parent (69 %), and had a household income of €2000 or more (76 %). Internalising problems in the borderline/clinical range were present in 25 % of the children, and externalising problems in 26 % of the children. Of the syndrome scales, borderline/clinical social problems (17 %) and attention problems (14 %) were most prevalent. Somatic complaints (8 %) were the least prevalent type of problem. For more descriptive information on the study population and the distribution of the characteristics for each reason for care use, see Table 3. The descriptive information before imputation and the number of missing values per variable are presented in Supplementary Table S1.

The following reasons were most often mentioned as a reason for mental health care use (Table 3): behavioural problems (36 %), life events and family problems (15 %) and emotional problems (15 %). Other psychosocial problems and other problems were both mentioned as reason by 14 % of the parents. Least often were mentioned: cognitive developmental problems (8 %), social problems (9 %) and physical problems (9 %). Of the 777 children using care, 123 (16 %) parents indicated two reasons for care use and 9 (1 %) indicated three reasons (data not shown).

Below, the results are described per reason for care use. Table 4

Table 3
Descriptives of the total study population and per reason for mental health care use (N = 777).

	Mental care for:								
	Total % (N)	Emotional problems	Behavioural problems	Social problems	Other psycho-social problems	Physical problems	Cognitive developmental problems	Life events and family problems	Other problems
Percentage per reason for mental health care use^a	100.0 (777)	14.5 (113)	35.6 (277)	8.6 (67)	13.8 (107)	8.6 (67)	7.6 (59)	15.4 (120)	13.9 (108)
<i>Sociodemographic characteristics</i>	Total % (N)	Emotional problems	Behavioural problems	Social problems	Other psycho-social problems	Physical problems	Cognitive developmental problems	Life events and family problems	Other problems
Sex									
Boy	56.0 (435)	33.6 (38)	68.6 (190)	52.2 (35)	68.2 (73)	50.7 (34)	55.9 (33)	41.7 (50)	51.9 (56)
Girl	44.0 (342)	66.4 (75)	31.4 (87)	47.8 (32)	31.8 (34)	49.3 (33)	44.1 (26)	58.3 (70)	48.1 (52)
Migrant origin									
No	49.9 (388)	55.8 (63)	49.5 (137)	61.2 (41)	59.8 (64)	52.2 (35)	54.2 (32)	35.8 (43)	51.9 (56)
Yes	50.1 (389)	44.2 (50)	50.5 (140)	38.8 (26)	40.2 (43)	47.8 (32)	45.8 (27)	64.2 (77)	48.1 (52)
Family situation									
Two-parent family	70.9 (551)	78.8 (89)	71.8 (199)	85.1 (57)	74.8 (80)	76.1 (51)	79.7 (47)	50.8 (61)	68.5 (74)
One-parent family	29.1 (226)	21.2 (24)	28.2 (78)	14.9 (10)	25.2 (27)	23.9 (16)	20.3 (12)	49.2 (59)	31.5 (34)
Educational level									
High	68.9 (535)	74.3 (84)	69.3 (192)	82.1 (55)	72.9 (78)	80.6 (54)	79.7 (47)	51.7 (62)	68.5 (74)
Middle/Low	31.1 (242)	25.7 (29)	30.7 (85)	17.9 (12)	27.1 (29)	19.4 (13)	20.3 (12)	48.3 (58)	31.5 (34)
Income									
≥€2000	75.7 (588)	83.2 (94)	75.1 (208)	89.6 (60)	78.5 (84)	80.6 (54)	84.7 (50)	66.7 (80)	71.3 (77)
<€2000	24.3 (189)	16.8 (19)	24.9 (69)	10.4 (7)	21.5 (23)	19.4 (13)	15.3 (9)	33.3 (40)	28.7 (31)
<i>Mental health problems^b (Dichotomous)</i>	Total % (N)	Emotional problems	Behavioural problems	Social problems	Other psycho-social problems	Physical problems	Cognitive developmental problems	Life events and family problems	Other problems
Anxious/depressed	10.6 (82)	15.9 (18)	11.6 (32)	7.5 (5)	20.6 (22)	11.9 (8)	5.1 (3)	10.0 (12)	5.6 (6)
Withdrawn/depressed	11.3 (88)	7.1 (8)	9.4 (26)	10.4 (7)	24.3 (26)	10.4 (7)	6.8 (4)	12.5 (15)	10.2 (11)
Somatic complaints	7.9 (61)	7.1 (8)	10.1 (28)	3.0 (2)	7.5 (8)	9.0 (6)	1.7 (1)	7.5 (9)	7.4 (8)
Social problems	16.5 (128)	13.3 (15)	16.6 (46)	11.9 (8)	16.8 (18)	14.9 (10)	11.9 (7)	20.8 (25)	18.5 (20)
Thought problems	12.0 (93)	14.2 (16)	15.2 (42)	10.4 (7)	21.5 (23)	9.0 (6)	5.1 (3)	10.0 (12)	6.5 (7)
Attention problems	14.3 (111)	6.2 (7)	23.8 (66)	14.9 (10)	17.8 (19)	9.0 (6)	3.4 (2)	12.5 (15)	8.3 (9)
Rule-breaking behaviour	11.7 (91)	5.3 (6)	15.2 (42)	9.0 (6)	11.2 (12)	9.0 (6)	5.1 (3)	15.0 (18)	11.1 (12)
Aggressive behaviour	12.6 (98)	3.5 (4)	18.8 (52)	7.5 (5)	22.4 (24)	10.4 (7)	5.1 (3)	8.3 (10)	11.1 (12)
Internalising	24.5 (190)	27.4 (31)	23.8 (66)	17.9 (12)	38.3 (41)	17.9 (12)	16.9 (10)	25.0 (30)	22.2 (24)
Externalising	25.9 (201)	18.6 (21)	32.5 (90)	14.9 (10)	35.5 (38)	20.9 (14)	13.6 (8)	25.8 (31)	22.2 (24)

^a Can add up to more than 100% as parents could specify more than one reason for care use.

^b Borderline/clinical cut-off of the 93rd percentile for the syndrome scales and the 84th percentile for the broadband scales.

shows the associations (odds ratios) of the sociodemographic characteristics with reasons for care use. Tables 5 and 6 show the associations of the mental health characteristics with reasons for care use, in which Table 5 focusses on the internalising and externalising CBCL broadband scales and Table 6 focusses on the eight types of problems of the CBCL syndrome scales.

2.1. Emotional problems as reason for care use

Girls were more likely to have emotional problems as reason for care use than boys (Table 4, OR:3.13 (95 % CI:2.02–4.86)). The other sociodemographic characteristics (Table 4) and having internalising problems (Table 5) were not associated. Children with externalising

Table 4

The association between sociodemographic characteristics and the problems mentioned as reason for mental health care use in 9–13-year-old children.

Univariate (M1)	Mental health care for: OR (95 % CI)							
	Emotional problems (N = 113)	Behavioural problems (N = 277)	Social problems (N = 67)	Other psychosocial problems (N = 107)	Physical problems (N = 67)	Cognitive developmental problems (N = 59)	Life events and family problems (N = 120)	Other problems (N = 108)
Sex								
Boy (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Girl	2.94 (1.93–4.47)	0.44 (0.32–0.60)	1.18 (0.71–1.95)	0.55 (0.36–0.85)	1.26 (0.76–2.08)	1.00 (0.59–1.71)	1.98 (1.34–2.94)	1.21 (0.81–1.82)
Migrant origin								
No (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Yes	0.76 (0.51–1.13)	1.02 (0.76–1.37)	1.18 (0.71–1.95)	0.62 (0.41–0.95)	0.90 (0.54–1.49)	0.82 (0.48–1.40)	1.97 (1.32–2.96)	0.91 (0.61–1.37)
Family situation								
Two-parent family (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
One-parent family	0.62 (0.38–1.00)	0.95 (0.67–1.34)	0.42 (0.21–0.84)	0.81 (0.50–1.33)	0.77 (0.41–1.44)	0.60 (0.30–1.19)	2.88 (1.81–4.56)	1.12 (0.69–1.80)
Educational level								
High (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Middle/Low	0.73 (0.44–1.19)	0.97 (0.67–1.42)	0.44 (0.22–0.89)	0.78 (0.45–1.35)	0.51 (0.26–1.03)	0.55 (0.28–1.08)	2.40 (1.50–3.84)	1.02 (0.64–1.62)
Income								
≥€2000 (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<€2000	0.60 (0.34–1.08)	1.06 (0.73–1.53)	0.36 (0.15–0.82)	0.83 (0.49–1.41)	0.75 (0.38–1.49)	0.55 (0.24–1.25)	1.71 (1.08–2.69)	1.30 (0.78–2.18)
<i>Multivariable (M2) - Adjusted for the other sociodem. charact.</i>	Emotional problems	Behavioural problems	Social problems	Other psychosocial problems	Physical problems	Cognitive developmental problems	Life events and family problems	Other problems
Sex								
Boy (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Girl	2.94 (1.93–4.49)	0.44 (0.32–0.60)	1.15 (0.69–1.91)	0.54 (0.35–0.83)	1.25 (0.75–2.07)	0.96 (0.56–1.65)	2.15 (1.42–3.26)	1.22 (0.81–1.84)
Migrant origin								
No (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Yes	0.85 (0.55–1.31)	1.05 (0.76–1.45)	0.78 (0.45–1.33)	0.63 (0.40–0.99)	0.99 (0.58–1.70)	0.96 (0.54–1.70)	1.63 (1.04–2.55)	0.82 (0.53–1.28)
Family situation								
Two-parent family (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
One-parent family	0.78 (0.55–1.31)	0.88 (0.57–1.33)	0.62 (0.28–1.35)	0.88 (0.48–1.59)	0.90 (0.44–1.88)	0.74 (0.34–1.64)	2.76 (1.58–4.79)	1.02 (0.58–1.79)
Educational level								
High (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Middle/Low	0.87 (0.50–1.50)	0.93 (0.60–1.44)	0.62 (0.28–1.35)	0.83 (0.44–1.54)	0.52 (0.25–1.11)	0.65 (0.31–1.34)	2.11 (1.20–3.73)	0.92 (0.55–1.54)
Income								
≥€2000 (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<€2000	0.80 (0.38–1.70)	1.14 (0.70–1.88)	0.59 (0.28–1.23)	1.12 (0.56–2.23)	1.01 (0.43–2.37)	0.73 (0.27–2.02)	0.64 (0.34–1.19)	1.44 (0.75–2.76)
<i>Multivariable (M3) – additionally adjusted for the syndrome scales</i>	Emotional problems	Behavioural problems	Social problems	Other psychosocial problems	Physical problems	Cognitive developmental problems	Life events and family problems	Other problems
Sex								
Boy (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Girl	3.13 (2.02–4.86)	0.40 (0.29–0.56)	1.16 (0.69–1.94)	0.51 (0.32–0.81)	1.28 (0.77–2.14)	0.99 (0.57–1.72)	2.19 (1.43–3.34)	1.24 (0.81–1.88)
Migrant origin								
No (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Yes	0.77 (0.49–1.22)	1.06 (0.75–1.48)	0.79 (0.46–1.36)	0.63 (0.39–1.01)	0.97 (0.57–1.68)	0.99 (0.56–1.76)	1.59 (1.01–2.50)	0.82 (0.52–1.28)
Family situation								
Two-parent family (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
One-parent family	0.79 (0.43–1.22)	0.86 (0.55–1.34)	0.62 (0.28–1.36)	0.90 (0.47–1.72)	0.91 (0.44–1.89)	0.71 (0.32–1.57)	2.80 (1.59–4.94)	0.97 (0.55–1.71)
Educational level								
High (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Middle/Low	0.85 (0.48–1.52)	0.97 (0.61–1.55)	0.60 (0.28–1.26)	0.82 (0.42–1.59)	0.51 (0.24–1.08)	63 (0.30–1.33)	2.07 (1.18–3.62)	0.89 (0.53–1.50)

(continued on next page)

Table 4 (continued)

Univariate (M1)	Mental health care for: OR (95 % CI)							
	Emotional problems (N = 113)	Behavioural problems (N = 277)	Social problems (N = 67)	Other psychosocial problems (N = 107)	Physical problems (N = 67)	Cognitive developmental problems (N = 59)	Life events and family problems (N = 120)	Other problems (N = 108)
Income								
≥€2000 (ref.)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<€2000	0.88 (0.40–1.94)	1.10 (0.65–1.87)	0.61 (0.22–1.66)	1.15 (0.56–2.36)	1.01 (0.42–2.40)	0.79 (0.28–2.22)	0.62 (0.33–1.16)	1.47 (0.75–2.89)

Bold: represents $p \leq 0.05$. OR = Odds Ratio. Multivariable analyses are additionally adjusted for age at outcome. Problem scores on Child Behavior Checklist are dichotomous, representing no problems and a problem level in the borderline/clinical range. M1-M2-M3 refer to the explanation of the statistical models in Table 2.

Table 5

The association between dichotomous mother-reported internalising and externalising problems and the problems mentioned as reason for mental health care use in 9–13-year-old children.

Univariate (M1)	Mental health care for: OR (95 % CI)							
	Emotional problems (N = 113)	Behavioural problems (N = 277)	Social problems (N = 67)	Other psychosocial problems (N = 107)	Physical problems (N = 67)	Cognitive developmental problems (N = 59)	Life events and family problems (N = 120)	Other problems (N = 108)
Internalising	1.12 (0.75–1.97)	0.95 (0.64–1.39)	0.65 (0.33–1.29)	2.14 (1.35–3.38)	0.66 (0.32–1.33)	0.59 (0.27–1.28)	1.02 (0.61–1.68)	0.88 (0.53–1.46)
Externalising	0.62 (0.35–1.08)	1.68 (1.17–2.42)	0.48 (0.22–1.05)	1.71 (1.06–2.73)	0.73 (0.37–1.47)	0.41 (0.16–1.03)	0.98 (0.60–1.59)	0.78 (0.46–1.33)
<i>Multivariable (M2)– adjusted for other scale</i>								
Internalising	1.46 (0.85–2.49)	0.76 (0.50–1.17)	0.79 (0.38–1.62)	1.94 (1.18–3.18)	0.70 (0.33–1.48)	0.75 (0.33–1.69)	0.98 (0.59–1.64)	0.95 (0.55–1.62)
Externalising	0.54 (0.29–1.00)	1.81 (1.22–2.70)	0.51 (0.22–1.17)	1.38 (0.83–2.30)	0.81 (0.39–1.69)	0.45 (0.17–1.19)	1.53 (0.91–2.57)	0.79 (0.45–1.39)
<i>Multivariable (M3) –additionally adjusted for sociodem. characteristics^a</i>								
Internalising	1.54 (0.89–2.67)	0.72 (0.46–1.11)	0.79 (0.38–1.65)	1.92 (1.15–3.21)	0.70 (0.33–1.48)	0.75 (0.33–1.72)	1.12 (0.64–1.98)	0.95 (0.55–1.63)
Externalising	0.50 (0.27–0.94)	2.02 (1.34–3.04)	0.54 (0.23–1.26)	1.53 (0.91–2.57)	0.83 (0.39–1.76)	0.48 (0.18–1.27)	0.83 (0.48–1.43)	0.76 (0.43–1.34)

Bold: represents $p \leq 0.05$. OR = Odds Ratio. Multivariable analyses are additionally adjusted for age at outcome. Problem scores on Child Behavior Checklist are dichotomous, representing no problems and a problem level in the borderline/clinical range.

^a Sex, migrant origin, family situation, educational level household and income household. M1-M2-M3 refer to the explanation of the statistical models in Table 2.

problems were significantly less likely to use care for emotional problems (Table 5, OR:0.50 (95 % CI:0.27-0.94)). Higher levels of anxious/depressed problems (Table 6, OR:3.51 (95 % CI:1.52–8.11)) and lower levels of attention (Table 6, OR:0.30 (95 % CI:0.11-0.80)) or aggressive problems (Table 6, OR:0.23 (95 % CI:0.07-0.71)) were associated with the use of care for emotional problems.

2.2. Behavioural problems as reason for care use

Girls were less likely to have behavioural problems as reason for care use than boys (Table 4, OR:0.40 (95 % CI:0.29-0.56)). Children with externalising problems were more likely to use care for behavioural problems (Table 5, OR:2.02 (95 % CI:1.34–3.04)), whereas having internalising problems was not associated (Table 5). Higher levels of attention problems (Table 6, OR:3.62 (95 % CI:2.14–6.12)), and lower levels of withdrawn/depressed problems (Table 6, OR:0.44 (95 % CI:0.23–0.86)) were associated with the use of care for behavioural problems.

2.3. Social problems as reason for care use

Children from a one-parent family, with a middle/low educated parent and with a low household income had significantly less often social problems as reason for care use compared to the other reasons, in the univariate analyses (Table 4). These associations disappeared after adjusting for the other sociodemographic characteristics. None of the mental health problems showed a significant association with this reason for care use (Table 5-6).

2.4. Other psychosocial problems as reason for care use

Girls were less likely to have other psychosocial problems as reason for care use than boys (Table 4, OR:0.51 (95 % CI:0.29-0.56)). Children with a migrant origin were also less likely to have psychosocial problems as reason (Table 4, OR:0.63 (95 % CI:0.40-0.99)). However, this association disappeared after adjusting for mental health problems. Children with internalising problems used more care for other psychosocial problems (Table 5, OR:1.92 (95 % CI:1.15–3.21)), whereas the association for externalising problems disappeared after adjusting for

Table 6

The association between dichotomous mother-reported types of mental health problems and the problems mentioned as reason for mental health care use in 9–13-year-old children.

–Univariate (M1)	Mental health care for: OR (95 % CI)							
	Emotional problems (N = 113)	Behavioural problems (N = 277)	Social problems (N = 67)	Other psychosocial problems (N = 107)	Physical problems (N = 67)	Cognitive developmental problems (N = 59)	Life events and family problems (N = 120)	Other problems (N = 108)
Anx./Depr.	1.69 (0.94–3.05)	1.16 (0.70–1.93)	0.60 (0.22–1.66)	2.68 (1.52–4.74)	1.07 (0.47–2.47)	0.39 (0.10–1.55)	0.86 (0.41–1.82)	0.49 (0.19–1.23)
Withdr./Depr.	0.52 (0.22–1.21)	0.73 (0.43–1.22)	0.92 (0.39–2.15)	3.20 (1.87–5.49)	0.86 (0.35–2.08)	0.51 (0.16–1.62)	1.09 (0.52–2.28)	0.89 (0.45–1.77)
Som. complaints	0.87 (0.38–2.01)	1.55 (0.88–2.72)	0.38 (0.09–1.61)	0.92 (0.40–2.09)	1.27 (0.53–3.07)	0.21 (0.03–1.54)	0.96 (0.44–2.11)	0.87 (0.38–2.01)
Social pr.	0.74 (0.37–1.49)	1.02 (0.64–1.62)	0.67 (0.28–1.61)	1.01 (0.56–1.84)	0.91 (0.40–2.07)	0.60 (0.23–1.55)	1.43 (0.77–2.64)	1.16 (0.62–2.17)
Thought pr.	1.27 (0.69–2.33)	1.56 (0.98–2.48)	0.90 (0.40–2.04)	2.31 (1.34–3.96)	0.77 (0.32–1.85)	0.31 (0.07–1.26)	0.75 (0.36–1.55)	0.44 (0.18–1.04)
Attention pr.	0.33 (0.14–0.77)	3.19 (2.10–4.85)	1.09 (0.54–2.22)	1.38 (0.80–2.39)	0.59 (0.25–1.39)	0.23 (0.06–0.96)	0.79 (0.43–1.46)	0.52 (0.26–1.07)
Rule-breaking	0.39 (0.12–1.30)	1.67 (1.00–2.79)	0.73 (0.27–1.98)	0.92 (0.46–1.87)	0.71 (0.22–2.28)	0.37 (0.07–1.82)	1.41 (0.71–2.79)	0.93 (0.42–2.06)
Aggressive	0.24 (0.08–0.67)	2.31 (1.50–3.55)	0.53 (0.21–1.36)	2.33 (1.39–3.91)	0.79 (0.35–1.78)	0.36 (0.11–1.61)	0.56 (0.28–1.15)	0.87 (0.45–1.65)
Multivariable (M2) – adjusted for other scales	Emotional problems	Behavioural problems	Social problems	Other psychosocial problems	Physical problems	Cognitive developmental problems	Life events and family problems	Other problems
Anx./Depr.	3.27 (1.48–7.21)	0.87 (0.47–1.63)	0.76 (0.25–2.32)	2.07 (1.00–4.26)	1.20 (0.45–3.18)	0.74 (0.16–3.33)	0.89 (0.37–2.15)	0.50 (0.18–1.41)
Withdr./Depr.	0.48 (0.19–1.24)	0.48 (0.25–0.90)	1.09 (0.44–2.72)	3.05 (1.63–5.69)	0.88 (0.32–2.43)	0.80 (0.24–2.66)	1.14 (0.53–2.47)	1.12 (0.52–2.39)
Som. complaints	0.83 (0.31–2.20)	1.40 (0.73–2.65)	0.43 (0.10–1.95)	0.44 (0.17–1.15)	1.41 (0.55–3.62)	0.31 (0.04–2.36)	1.10 (0.47–2.56)	1.13 (0.46–2.78)
Social pr.	0.88 (0.39–1.99)	0.75 (0.43–1.31)	0.73 (0.28–1.91)	0.57 (0.26–1.24)	1.05 (0.39–2.81)	0.87 (0.32–2.36)	1.57 (0.81–3.05)	1.50 (0.76–2.95)
Thought pr.	2.33 (1.10–4.92)	0.90 (0.51–1.59)	1.16 (0.46–2.92)	1.89 (0.96–3.73)	0.88 (0.32–2.44)	0.59 (0.13–2.65)	0.80 (0.34–1.90)	0.51 (0.19–1.35)
Attention pr.	0.33 (0.12–0.86)	3.41 (2.05–5.67)	1.48 (0.66–3.30)	0.74 (0.37–1.49)	0.60 (0.22–1.61)	0.36 (0.08–1.57)	0.88 (0.42–1.85)	0.56 (0.24–1.28)
Rule-breaking	0.51 (0.14–1.99)	1.22 (0.66–2.25)	0.94 (0.31–2.82)	0.57 (0.24–1.36)	0.77 (0.21–2.83)	0.52 (0.10–2.81)	1.83 (0.81–4.10)	1.05 (0.43–2.56)
Aggressive	0.23 (0.07–0.72)	1.63 (0.94–2.81)	0.54 (0.18–1.61)	2.32 (1.18–4.55)	0.95 (0.36–2.49)	0.79 (0.22–2.85)	0.44 (0.18–1.09)	1.30 (0.59–2.84)
Multivariable (M3) – additionally adjusted for socio-demographic characteristics ^a	Emotional problems	Behavioural problems	Social problems	Other psychosocial problems	Physical problems	Cognitive developmental problems	Life events and family problems	Other problems
Anx./Depr.	3.51 (1.52–8.11)	0.80 (0.42–1.51)	0.76 (0.25–2.32)	2.02 (0.96–4.26)	1.19 (0.45–3.14)	0.73 (0.16–3.34)	0.98 (0.41–2.33)	0.51 (0.18–1.45)
Withdr./depr.	0.53 (0.21–1.37)	0.44 (0.23–0.86)	1.10 (0.44–2.77)	3.05 (1.62–5.74)	0.90 (0.33–2.47)	0.81 (0.24–2.70)	1.19 (0.53–2.66)	1.11 (0.52–2.39)
Som. complaints	0.95 (0.34–2.64)	1.28 (0.67–2.45)	0.48 (0.10–2.25)	0.41 (0.15–1.11)	1.49 (0.57–3.90)	0.32 (0.04–2.51)	1.23 (0.51–2.94)	1.15 (0.47–2.82)
Social pr.	0.96 (0.36–2.03)	0.82 (0.45–1.49)	0.86 (0.32–2.32)	0.61 (0.27–1.38)	1.13 (0.42–3.04)	0.98 (0.35–2.74)	1.23 (0.57–2.62)	1.46 (0.73–2.94)
Thought pr.	1.94 (0.89–4.25)	0.99 (0.55–1.78)	1.07 (0.42–2.70)	2.00 (1.00–4.01)	0.84 (0.30–2.31)	0.55 (0.13–2.47)	0.76 (0.32–1.83)	0.49 (0.18–1.32)
Attention pr.	0.30 (0.11–0.80)	3.62 (2.14–6.12)	1.34 (0.60–3.03)	0.73 (0.36–1.48)	0.56 (0.21–1.51)	0.34 (0.08–1.47)	0.98 (0.45–2.12)	0.56 (0.24–1.29)
Rule-breaking	0.58 (0.15–2.28)	1.17 (0.62–2.20)	1.21 (0.39–3.79)	0.60 (0.24–1.50)	0.87 (0.22–3.35)	0.59 (0.11–3.24)	1.58 (0.64–3.91)	1.01 (0.40–2.55)
Aggressive	0.23 (0.07–0.71)	1.72 (0.98–3.02)	0.50 (0.17–1.49)	2.31 (1.16–4.60)	0.91 (0.35–2.40)	0.74 (0.20–2.69)	0.44 (0.17–1.15)	1.29 (0.59–2.85)

Bold: represents $p \leq 0.05$. OR = Odds Ratio. Multivariable analyses are additionally adjusted for age at outcome. Problem scores on Child Behavior Checklist are dichotomous, representing no problems and a problem level in the borderline/clinical range.

^a Sex, migrant origin, family situation, educational level household and income household. M1-M2-M3 refer to the explanation of the statistical models in Table 2.

internalising problems (Table 5). Higher levels withdrawn/depressed (Table 6, OR:3.05 (95 % CI:1.62–5.74)) or aggressive problems (Table 6, OR:2.31 (95 % CI:1.16–4.60)) were associated with the use of care for other psychosocial problems.

2.5. Physical problems as reason for care use

None of the socio-demographic and mental health characteristics was associated with this reason for care use compared to the other reasons for care use (Tables 4-6).

2.6. Cognitive developmental problems as reason for care use

None of the sociodemographic characteristics was associated with cognitive developmental problems as reason for care use (Table 4). Attention problems showed a negative association with this reason in the univariate analysis (Table 6, OR:0.23 (95 % CI:0.06-0.96)), which disappeared after adjusting for the other types of problems. None of the other mental health problems showed a significant association with cognitive developmental problems as reason for care (Tables 5-6).

2.7. Life events and family problems as reason for care use

Girls (Table 4, OR:2.19 (95 % CI:1.43-3.34)), children with a migrant origin (OR:1.59 (95 % CI:1.01-2.50)), children from a one-parent family (OR:2.80 (95 % CI:1.59-4.94)) and children from parents with a lower educational level (OR:2.07 (95 % CI:1.18-3.62)) were more likely to have life events and family problems as reason for care use compared to the other reasons (Table 4). None of the mental health problems showed an association with this reason for care use (Tables 5-6).

2.8. Other problems as reason for care use

None of the sociodemographic and mental health characteristics was associated with this reason for care use (Tables 4-6).

2.9. Complete case and sensitivity analyses

The complete case analyses can be found in Table S2-S4. While the complete case analyses showed more significant results, the associations were all in the same direction as the analyses on the imputed data. In the sensitivity analyses, we investigated the mental health problems as a continuous score (See Table S5-S6). However, the linearity assumption was not met and the model did not improve when using a log or quadratic transformation (Field, 2013; Stoltzfus, 2011). Therefore, the odds ratio's provided in the tables on continuous data should be interpreted with caution. The analyses on the continuous scores were mainly in the same direction and showed more significant associations compared to the analyses on the dichotomous scores.

3. Discussion

The current study investigated the reasons for mental health care use among care users between 9 and 13 years old and the characteristics that are associated with these reasons. Largely in line with our hypothesis, mental health care was most often obtained for the following parent-reported reasons: behavioural problems, life events and family problems, and emotional problems. Moreover, in line with our hypothesis, the results showed that girls were more likely to have emotional problems and life events and family problems as reason for care use, and boys were more likely to have behavioural problems or other psychosocial problems as reason. Children with a migrant origin, in a one-parent family and with middle/low educated parents were more likely to have life events and family problems as reason compared to the other reasons for care use.

Multiple mental health problems were associated with specific reasons for mental health care use. Emotional problems as reason for care use were associated with being anxious/depressed and with less externalising problems, attention problems and aggressive behaviour at 9 years old. Behavioural problems as reason for care use were significantly associated with externalising problems, attention problems and with being less withdrawn/depressed compared to the other reasons for care use. Other psychosocial problems as reason for care use were significantly associated with internalising problems, being withdrawn/depressed and aggressive behaviour. These findings are only partly in line with our hypothesis as not all mental health problems were

associated with corresponding reasons for care use.

Our findings on the most common reasons for care use are more in line with the study by Fitzpatrick et al. (2011) than by Pedrini et al. (2012) (discussed in the introduction). This might be explained by the target group. We studied 9-13-year-olds, close to the 12-15-year-olds studied by Fitzpatrick et al. (2011). Pedrini et al. (2012) included children from birth up to 17 years old and, therefore, might have more childhood-related mental health problems labelled as most prevalent.

3.1. Sociodemographic characteristics

Girls were more likely to have emotional problems and less likely to have behavioural problems as reason for care use compared to boys, also after adjusting for mental health problems. A plausible reason for this finding is given by Gardner, Pajer, Kelleher, Scholle, and Wasserman (2002). They showed that boys more often received a referral for externalising problems while girls more often received a referral for internalising problems, although the problem profiles of the boys and girls were similar in this study. This implies that – next to the mental health problems – the sex of the child determines the reason for care use. Moreover, in the current study, children who were using mental health care because of behavioural problems mainly experienced hyperactivity and/or inattention at 9 years old (87 %), which is more prevalent among boys (Georgiades et al., 2019). Further, girls were less likely to receive care for other psychosocial problems, adjusted for mental health problems. This could probably be expected, as autism spectrum disorder (i.e. 2/3 of the group with other psychosocial problems as the reason for care use) is often under-recognized in girls (Gould, 2017).

Having a migrant origin (i.e. at least one (grand)parent was born outside of the Netherlands) was associated with life events and family problems as reason for care use. A possible explanation might be that this group faces life events more often compared to children without a migrant origin (Hatch & Dohrenwend, 2007). Another study shows, in line with our study, that 5-19-year-old children with a migrant origin are more often in care for child-parent problems or social/environmental problems, whereas children without a migrant origin are more often receiving care for a psychiatric disorder (de Haan, Boon, Vermeiren, & de Jong, 2014). The authors' explanation is that it might be harder to recognise psychiatric disorders in children with a migrant origin and that they, therefore, receive care for other reasons than a psychiatric disorder. About one in four people in the Netherlands have a migrant origin (Statistics Netherlands, 2022). Most originate from Turkey (9.5 %), Morocco (9.1 %) and Suriname (7.7 %). It is also important to keep in mind that children and adolescents with a migrant origin, generally, experience more difficulties in accessing mental health care (Elster, Jarosik, VanGeest, & Fleming, 2003; Lu et al., 2021). Possible reasons are a lack of trained staff with diverse backgrounds or limited understanding of tailored care for children with a migrant origin by health professionals (Lu et al., 2021; Tulli et al., 2020). Future studies could focus on whether these difficulties also affect the reasons for which mental health care is used (or not used). Children from a one-parent family had only life events and family problems more often as reason for care use compared to the other reasons. A probable explanation is that a divorce is a life event in itself and, therefore, children of divorced parents have a higher risk for this reason compared to children with parents that are together (Reiss et al., 2019). Income level was not associated with any of the reasons for mental health care use. This indicates little socio-economic differences regarding reasons for mental health care use.

3.2. Mental health problems

Three of the reasons for mental health care use between 9 and 13 years old were associated with mother-reported problems at 9 years old. These were the parent-reported reasons that care was obtained for emotional problems, for behavioural problems and for other

psychosocial problems. The other five reasons, i.e. social problems, physical problems, cognitive development, life events and family problems, and other problems, were not associated with mother-reported mental health problems at 9 years.

Emotional problems and behavioural problems as reasons for care were associated with the corresponding mother-reported mental health problems. Other psychosocial problems as reason were associated with having internalising problems, being withdrawn/depressed and having aggressive problems. The group other psychosocial problems mainly consisted of children whose parents reported autism spectrum disorder as reason for care use (Table 1). These children often exhibit internalising as well as externalising problems (Bauminger, Solomon, & Rogers, 2010; Neuhaus, Bernier, & Beauchaine, 2014).

For the other reasons for care use, none of the mental health problems at 9 years old was associated. This might have various explanations. First, the mental health problems the children receive care for might have developed after the measurement of the problems at 9 years old. Quite some problems have an age of onset between 9 and 13 years old (McGorry, Purcell, Goldstone, & Amminger, 2011; Ormel et al., 2015; Plass-Christl et al., 2018). Second, it is also possible that the level of problems changed between 9 and 13 years old, as it is known that these problem levels are not always stable (Vella, Gardner, Swann, & Allen, 2019). Third, the CBCL is aimed at measuring emotional and behavioural problems. This is in line with the A-axis of the CAP-J. However, children also received care for other problems that might not be captured by the CBCL, i.e. physical problems, cognitive developmental problems and other problems. A last explanation might be that our study sample is relatively small. Therefore, we might not have been able to demonstrate associations that are present in the population.

3.3. Implications

This study has several implications for practice, policy and research. Regarding practice, distinctive profiles have been identified for children using care for emotional problems, behavioural problems, other psychosocial problems and life events and family problems. Knowledge on these profiles could help to improve care and to tailor prevention strategies. This might be especially of interest in the school setting, which is involved in the lives of 9–13-year-old children. Teachers and other professionals working with children could receive training or support in dealing with the needs of children with these specific profiles. Furthermore, children with a migrant origin more often used care for life events and family problems compared to children without a migrant origin. Therefore, the care can become more inclusive, people-centred and safe by ensuring that care providers interact culturally sensitive and are familiar with life events and family problems that may occur in foreign cultures. Dependent on the specific infrastructures of mental health services in different countries and settings, this might ask for different measures.

The profiles for social problems, physical problems, cognitive developmental problems and other problems as reason for care use were not distinctive in any of the sociodemographic or mental health characteristics. Therefore, based on this study, the opportunities to tailor care or create prevention strategies to these types of reasons are probably limited.

Regarding policy, the information from this study can be used to improve prevention strategies. Behavioural problems were most often mentioned as a reason for care use, and this type of care was significantly more often used by boys than girls. Prevention strategies could target boys who are susceptible to developing behavioural problems. For example, providing preventive parenting or teacher support programs might prevent more severe problems and unfavourable development.

Last, our findings have implications for research. We found that emotional problems are significantly under-represented as reason for care use compared to behavioural problems in our sample (ratio 1:2.5), while these problems are equally prevalent in the general population

(Georgiades et al., 2019; Gritti et al., 2014). This could mean, on the one hand, that children exhibiting internalising problems are less recognised or seek care less often. If so, it is important to investigate whether this indicates a treatment gap or whether the problems diminish throughout childhood. On the other hand, this finding might indicate that children exhibiting internalising problems may receive care, but for other reasons that are more prominent.

3.4. Strengths and limitations

This study has several strengths. First, to our knowledge, it is the first study that provides insight into sociodemographic characteristics and mental health problems in association with various specific reasons for care use. Knowing the profiles of children that use care for specific reasons enables tailoring the type of care to the users. Second, we studied a relatively young age group. Many studies on mental health care focus on adolescents, while care is also used before adolescence. This study provides insight into what children use care for which reason in this age category.

This study also has some limitations. First, the number of participants included in this study per reason for care use is relatively low and might have led in some analyses to a power problem. If so, this might have resulted in an under-identification of associations. Second, the reasons for care use were parent-reported. Consequently, in some cases, the actual reason for care use might differ from the reason mentioned by the parents, e.g. due to recall bias or differences in judgements by parents and caregivers. Third, the duration and intensity of the mental health care received are unknown. Determinants might differ for children with very intense long-term care relative to children with mild short-term care. Last, the study sample might not be representative for all children - in the Netherlands or elsewhere - using mental health care. Moreover, the results can only be generalised to populations of children that receive mental health care, as children without care were excluded.

3.5. Future research

The negative association between having a migrant origin and care for other psychosocial problems disappeared after adjusting for mental health problems. This might be due to a lack of power.

Future research is needed to further understand the sociodemographic and mental health characteristics of children using mental health care for specific reasons. We recommend studying more in-depth the determinants of the non-psychosocial reasons for care use, e.g. physical problems or cognitive developmental problems, as we could not find specific characteristics that were associated with these reasons. More insight in determinants of these types of care is important for preventive strategies and optimisation of care. Furthermore, we recommend replicating the study in a larger sample focussing on the psychosocial reasons for care use, to ascertain the direction and strength of the associations.

Continued research in reasons for care use is also warranted to enable practice and policy to anticipate on the provision of proper care and implementation of prevention programs. Not all problems that children receive care for might be evident from health monitoring in the general population (Eijgermans et al., 2021). Life events and family problems as the second most important reason for care use in our population sample is probably a good example. Knowledge on who receives care and for what reasons also opens the way for further research questions, like how we are able to treat children with specific problems effectively. Furthermore, future research should focus on the role of the parents, in addition to the children and care providers. Studying factors such as differences in parental awareness of available services, perceived problems and perceived need for care regarding children's emotions and behaviours, and the parental level of involvement in their child's mental health care, might provide additional insights.

We also recommend unravelling why some sociodemographic

characteristics are still associated with specific reasons for care use when adjusted for mental health problems. Possible explanations are that the CBCL does not fully cover the mental health problems that children receive care for or that opportunities of receiving care are unequal across groups with certain sociodemographic characteristics. Moreover, scientific-based interventions should be (further) developed and implemented to prevent that children eventually need care for emotional and behavioural problems. We recommend to make these interventions – on for example behavioural regulation and how to deal with stress and emotions - easily accessible for use by professionals that work with children. Last, when replicating the study, we recommend to study different age groups, other populations and various mental health care settings to enrich the scientific evidence.

4. Conclusion

Behavioural problems were most often mentioned as reason for mental health care use in the current study. Emotional problems, behavioural problems, other psychosocial problems and life events and family problems as reasons for care use were associated with multiple sociodemographic characteristics and earlier reports on mental health problems. Social problems, physical problems, cognitive developmental problems and other problems as reason for care use were not found to be associated with sociodemographic or earlier mental health characteristics. To conclude, this study provides some insights in the profiles of children using mental health care for specific reasons, but also triggers new research to unravel the determinants further.

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Ethical standards

The Medical Ethics Review Board of the Erasmus Medical Center approved the study protocols. Therefore the study has been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. All parents provided written informed consent prior to their inclusion and before the start of each phase in the Generation R Study.

CRedit authorship contribution statement

D.G.M. Eijgermans: Conceptualization, Methodology, Formal analysis, Writing – original draft. **P.W. Jansen:** Writing – review & editing. **A.M. Shuker:** Methodology, Writing – review & editing. **J.F.P. Heydelberg:** Writing – review & editing. **H. Raat:** Supervision, Writing – review & editing. **W. Jansen:** Conceptualization, Supervision, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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Appendix A. Supplementary data

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