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ORIGINAL ARTICLE



Burden of mental health problems: quality of life and cost-of-illness in youth consulting Dutch walk-in youth health centres

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ABSTRACT

Background: Little is known about the burden of (sub-threshold) mental health problems in youth.

Aim: To examine the burden of mental health problems in terms of health-related quality of life (HRQoL) and cost-of-illness, for first visitors of the Dutch youth walk-in centres (@ease).

Method: A bottom-up, prevalence-based burden of disease study from a societal perspective. HRQoL was assessed through the EuroQoL (EQ-5D-5L), and cost-of-illness via items about truancy and health care utilization.

Results: Participants ($N=80$) showed a decreased HRQoL compared to the general population of Dutch youth. In the three months prior to their 1st attendance, participants skipped on average 4.11 days of school and had 1.03 health care visits, leading to total costs of €512.64 per person. Females had significantly higher health care costs and lower HRQoL. Health care use was lower in those not speaking the Dutch language. Living alone was a significant predictor of truancy (costs), and therefore total costs.

Conclusions: Mental health problems in youth consulting @ease have a considerable impact on the individual's HRQoL, and an economic impact on society, yet almost 75% is not receiving care. A lack of interventions in this critical period in life may have major lifelong consequences.

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Introduction

Mental disorders are the chronic diseases of the young (Insel, 2009). The onset is mostly in the first three decades of life; at 24 years of age, three quarters of all lifetime cases have started (Kessler et al., 2005). Therefore, the impact of mental disorders on individuals, the health care system and society is enormous. The World Health Organisation estimated 33% of years lost to disability in 15–29 year olds (World Health Organization, 2018). According to the Global Health Estimates 2016, mental and substance use disorders are the leading cause of non-fatal disease burden. This makes mental disorders a major challenge for health care systems worldwide.

Nonetheless, worldwide, less than 2% of government health expenditure is spent on mental health care (World Health Organization, 2017). Health care costs, however, are not the only costs caused by mental disorders as there is the societal burden of absenteeism from school and work (De Graaf et al., 2010, 2011). Studies describing the economic impact for society vary substantially, due to their

methodology and setting (Hu, 2004), but indicated that 67%–92% of the total costs of having a mental disorder are made outside the health care system, mainly due to productivity losses (Chevreul et al., 2013; Jager et al., 2008; Lee et al., 2017; Smit et al., 2006). In the Netherlands, the annual per capita excess costs of having any common mental disorder are calculated as €3200, which is comparable to those of somatic disorders (Smit et al., 2006).

Adolescence is both a crucial developmental period, and a vulnerable period in life, causing mental ill health in youth to be associated with negative life outcomes later on in life (Gibb et al., 2010). A major factor is the risk of school dropout, which is a dynamic process starting early in life and with potential major socioeconomic consequences (Theunissen-Lamers, 2016).

16% of adolescents suffer from symptoms of mental disorders with functional impairment and decreased quality of life (Roberts et al., 2014). Negative consequences are not exclusively seen in diagnosed mental disorders though; a recent study showed already a great impact on society

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caused by sub-threshold mental disorders in children (Fatori et al., 2018). Therefore, to prevent the development and persistence of mental disorders and its associated burden later in life, focus in mental health has to be on early stage improvement of wellbeing and resilience, specifically in 12–25 year-olds (McGorry & Mei, 2018; McGorry & Van Os, 2013). A huge challenge is the need for care versus the use of care: adolescents are least likely to seek help, due to age specific barriers, such as a lack of mental health literacy, poor access, financial costs and a misfit between service structures and the needs of youngsters (Hetrick et al., 2017; Rickwood et al., 2007; Vyas et al., 2015). As a consequence, less than a third of all youngsters (aged 12–25 years) that experience problems with their mental health receive any professional help for it (De Graaf et al., 2010; Slade et al., 2009).

Aim

The burden of mental disorders is a rising theme on the research agenda, resulting in studies in adults and youth with a full-blown mental disorder, who are already involved in care. To the best of our knowledge, little is known about the burden of (sub-threshold) mental health problems in the critical group of youth who are in need for help, especially those without any form of professional care. Knowledge about this dark number of youngsters and the associated burden is needed, to underline the importance of the problem for policy and research agenda's, and to thereby stimulate easy accessible youth mental health care, prevention as well as early detection and intervention. The aim of this study is therefore to describe the burden of mental health problems in terms of health-related quality of life (HRQoL) and cost-of-illness in individuals first visiting the Dutch @ease youth walk-in centres to seek help for their mental problems.

Materials and methods

Study design and setting

This is a multicentre, bottom-up, prevalence-based study focusing on the burden of disease expressed in cost-of-illness (Euros) and HRQoL (utilities) from a societal perspective, partly based on the Dutch guidelines for economic health care evaluation (Knies, 2016). The Medical Ethical Committee of Maastricht University has assessed and approved the study (METC number 2017-0046). Data of @ease visitors who, after being informed about the study procedures, consented to participate were included in the study. Anonymized data were stored on a secured server of Maastricht University.

The Dutch multicentre organization @ease (www.ease.nl) has been adapted from the Australian headspace model (www.headspace.au.org) (McGorry & Mei, 2018). It offers youth-friendly, easy accessible peer-to-peer support to persons between 12 and 25 years old with problems around mental health and wellbeing, currently in Maastricht and

Amsterdam. Trained volunteers, together with healthcare professionals, offer sessions anonymous and free of charge.

Participants

Since the start of @ease in January 2018, all visitors were asked to fill in a digital questionnaire on a tablet. Of all visitors who agreed to fill in the questionnaire, first visit data, collected between January 2018 and May 2019, was included in the present study. Inclusion criteria were met when the person filled in at least one of the primary outcome measures: HRQoL, truancy and (mental) health care utilization.

Outcome measurement

The HRQoL was measured using the five-dimensional, five-level EuroQoL (EQ-5D-5L) consisting of the following dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each dimension has five levels: no problems, minor problems, moderate problems, severe problems, and not able to perform a certain activity. In mental health, the EQ-5D is proven to reflect the impact of common mild to moderate conditions and discriminate between severity sub groups (Brazier, 2010; Lamers et al., 2006).

To calculate the cost-of-illness, the societal perspective was broken down into mental health care utilization and truancy. These unities were measured with a three-month reference period by the following items:

1. During the last three months, how often did you visit a health care professional for mental health issues or addiction problems?
2. How many days have you skipped school in the last three months?

The item assessing truancy includes skipping days of all sorts of education, such as school and university, and because of the vast majority of @ease visitors were involved in education, productivity losses at work were not being assessed. All items were concise to maintain the feasibility of the questionnaire, and to stay in line with the low-threshold character of @ease.

In addition to the primary outcome measurements, the questionnaire contained questions on participant characteristics including age, sex, country of birth, language of the questionnaire, living situation, occupation, current level of education, and parental history of mental illness, and the young person's social functioning was rated by the trained volunteers using the Social and Occupational Functioning Assessment Scale (SOFAS; American Psychiatric Association, 2013).

Analysis

Each 5-level health state of the EQ-5D-5L corresponds with a utility on a scale of 0–1, where 0 indicates death and 1 full health. Utilities corresponding with the measured health states were derived from the Dutch tariffs (Versteegh et al., 2016).

To get insight into truancy and health care costs, the number of days skipped school and the number of visits to a health care professional were multiplied by a cost price. Valuation of truancy was based on data of Statistics Netherlands (2018a). The total expenditure per educational level in 2017 was used, including expenditure of the government, households, companies, non-profit institutions and organizations abroad. The total expenditure was divided by the number of students per educational level in academic year 2017/2018 (Statistics Netherlands, 2018b) to calculate the costs per student per year. Educational levels were primary education, secondary education, secondary vocational education, higher professional education, and university. For the cost price per day, the costs per student per year were divided by 200, based on an average of 40 school weeks of 5 days per year. The latter corresponds with the method used by Drost et al. (2014).

This study reports the proportion of the population who visited a general practitioner (GP) and/or a mental health care service for mental health problems. Which specific kind of health care professional was consulted was not addressed in the questionnaire. Therefore, we calculated a weighted average based on the health care utilization described in the Netherlands Mental Health Survey and Incidence Study-2 (NEMESIS-2) (De Graaf et al., 2010) and the reference price for a GP and mental health care services consult as described in the Dutch costing manual (Hakkaart-van Roijen et al., 2016). The calculated weighted average was used as the cost price for (mental) health care utilization. All costs were indexed for the year 2018.

We explored the correlation between total costs and utilities using Pearson's correlation coefficient, where a coefficient between 0 and $(-)$ 0.35 represents a weak correlation and a coefficient $>(-)$ 0.35 a moderate to strong correlation (Taylor, 1990).

We conducted stepwise multiple linear regressions to predict utility, health care costs, truancy costs, and total costs for sub groups based on the participant characteristics. As cost data are usually skewed and not normally divided, we had to take into account non parametric bootstrapping (1000 replications) for all cost categories. The alpha level was set at 0.05 for all analyses. Analyses were conducted using SPSS Statistics version 25, except for bootstrapping, which was conducted with Microsoft Office Excel 2003.

Sensitivity analyses

We performed four sensitivity analyses to check possible influences of assumptions in the base case analyses. First, a complete case analysis was done on both total costs and utility to investigate the influence of the inclusion of persons with missing scores on at least one primary outcome measure. Second, we used the reference price of unpaid work (Hakkaart-van Roijen et al., 2016) in combination with the standard hours per educational level per year (Ministry of Education Culture & Science, 2020) divided by 200 school days as the cost price for one day skipping school. Third, we compared the Dutch tariff with the European tariff of

Table 1. Participant characteristics ($N = 80$).

Participant characteristics	<i>N</i> (%)
Sex	
Male	32 (42.7)
Female	42 (56.0)
Other	1 (1.3)
Age (mean (SD))	20.52 (3.81)
Country of birth	
The Netherlands	38 (50.7)
Germany	10 (13.3)
Other countries Europe	14 (18.2)
Countries in Asia	10 (13.3)
Countries in North America	3 (3.9)
Countries in Oceania	1 (1.3)
Countries in Africa	1 (1.3)
Questionnaire	
Dutch	43 (54.4)
English	36 (45.6)
Living situation	
Peers	28 (35.2)
Alone	21 (25.9)
Parents	20 (25.0)
Partner	7 (8.8)
Care givers	1 (1.3)
Other	3 (3.9)
Parental history of mental illness	34 (44.8)
Daily occupation	
Education	64 (83.1)
Job	5 (6.5)
Education and job	6 (7.8)
None	2 (2.6)
Current education	
Primary school	1 (1.4)
Secondary education	18 (26.0)
Secondary vocational education	3 (4.3)
Higher professional education	9 (13.0)
University	38 (55.1)
SOFAS score (mean (SD))	65.41 (15.76)

SD: standard deviation.

the three-level EQ-5D (Greiner et al., 2003), as there is no European valuation set for the five-level version available yet. Last, a possible relation between the use of mental health care and HRQoL in our sample was investigated.

Results

Between January 2018 and May 2019, 125 persons visited @ease for the first time. 64% of them responded to at least one primary outcome ($N = 80$) (Table 1). 54.4% of the participants responded to the Dutch questionnaire, which was used as a proxy of being able to find his/her way in the Dutch society and health care system. Of the 34 persons (44.8%) who reported having at least one parent with a history of a mental disorder, 5 stated that both parents (had) suffered from a mental disorder. The mean SOFAS score of 65.41 (SD 15.76), corresponds with some to moderate difficulty in social, occupational, or school functioning.

HRQoL

The mean utility of the study population was 0.62 (SD 0.21). The dimensions usual activities and anxiety/depression were highly affected, with respectively 47.3% and 74.3% having moderate problems or worse (Table 2). On the

Table 2. Frequencies of responded levels on the five dimensions of the five-dimensional, five-level EuroQoL ($N = 74$).

	No problems <i>N</i> (%)	Minor problems <i>N</i> (%)	Moderate problems <i>N</i> (%)	Severe problems <i>N</i> (%)	Extreme problems <i>N</i> (%)
Mobility	69 (93.2)	5 (6.8)	0 (0.0)	0 (0.0)	0 (0.0)
Self-care	64 (86.5)	7 (9.5)	2 (2.7)	0 (0.0)	1 (1.4)
Usual activities	21 (28.4)	18 (24.3)	26 (35.1)	9 (12.2)	0 (0.0)
Pain/discomfort	35 (47.3)	23 (31.1)	12 (16.2)	2 (2.7)	2 (2.7)
Anxiety/depression	2 (2.7)	17 (23.0)	29 (39.2)	22 (29.7)	4 (5.4)

Table 3. Resource use and costs in the three months prior to visiting @ease.

	Unit	Users <i>N</i> (%)	Units per person Mean (SD)	Costs per person Mean (SD)
Health care costs ($N = 74$)	Contact	20 (27.0)	1.03 (2.83)	103.59 (285.75)
Truancy costs ($N = 68$)	Day	40 (58.8)	4.11 (6.03)	402.29 (580.96)
Total costs ($N = 64$)				512.64 (641.12)

All costs in Euros. SD: standard deviation.

contrary, mobility and self-care had a minor influence on the loss of HRQoL.

Cost-of-illness

27% of the population reported having visited a mental health care professional in the last three months (Table 3), leading to a population mean of 1.03 contacts per person with corresponding costs of €103.59 per person in the last three months.

Of the 69 participants following education, 58.8% reported that they skipped school at least one day in the last three months (Table 3), leading to a mean of 4.06 days skipped school in the total study population, corresponding with €402.29 per person in the last three months.

64 respondents answered both cost-of-illness items. Summing up their health care costs and truancy costs resulted in a total of €32,809.06, which equals €512.64 per person in the last three months, corresponding to €2,050.56 per person per year. 28% of these youngsters did not use health care nor skipped school.

Relation between costs and HRQoL

We calculated Pearson's correlation between total costs and utilities, resulting in a weak negative, statistically non-significant correlation coefficient of -0.136 ($p = 0.30$).

Sub group analyses

With the multiple regression analyses, both sex and SOFAS score were significant predictors of utility, with males showing a higher HRQoL compared to females ($\beta = -0.141$, $p = 0.012$), and a higher social functioning score relating to a higher HRQoL ($\beta = 0.004$, $p = 0.043$), explaining 20% of variance. Furthermore, living alone, compared to living with others in any form (parents, caregivers, peers, or partner), was the only significant predictor of truancy costs ($\beta = 623.35$, $p < 0.001$, $R^2 = 0.204$), and total costs ($\beta = 605.26$, $p = 0.003$, $R^2 = 0.161$). In the multiple regression analyses, none of the participant characteristics were significant predictors of health care costs. However, as our cost data were highly skewed, the normality assumption was violated. Therefore, we applied

bootstrapping on four relevant variables: sex, living situation, the language of the questionnaire, and parental history of mental illness (Table 4(a-c)). The significant relation between living alone and both truancy costs and total costs was confirmed. Moreover, females and Dutch speaking respondents made significantly higher health care costs than males and non-Dutch speakers.

Sensitivity analyses

The sensitivity analyses showed negligible differences compared to our initial analyses. Including people with missing scores on one of the primary outcome measures only very mildly increased the utility (0.01) and the total costs (€6.67). Using the other cost price for truancy led to slightly higher costs (€21.54) in comparison with the base case analysis. When we used the three-level European valuation set, the mean utility of the population was only 0.04 higher than in the base case analysis. Linear regression analysis showed no significant relation between health care costs and utility.

Discussion

The present study shows the burden of mental health problems in youth consulting walk-in centre @ease in terms of HRQoL and cost-of-illness. Our results indicate a distinct decreased HRQoL combined with considerable costs for society in a population of help-seeking youth. It also shows a gap in care: despite the decreased HRQoL combined with high numbers of truancy, almost three quarters of our population had not yet received care.

The burden of the mental health problems becomes apparent when comparing their HRQoL (0.62) with that of peers in the Dutch general population (between 0.91 and 0.96) (Versteegh et al., 2016), or adolescents with a chronic somatic disorder (between 0.77 and 1.00) (Hernandez et al., 2018; Tarride et al., 2010). The HRQoL in our population is in line with that of adolescents with a full-threshold depression reporting a utility between 0.50 and 0.76 (Byford, 2013; Lynch et al., 2016). The HRQoL impact was highest on the dimensions 'Usual activities' and 'Anxiety/depression'. The latter is directly related to common mental health problems

Table 4. Sub-group analyses.

	Costs per person	Bootstrapped costs per person	Bootstrapped difference	
	Mean (SD)	Mean (SD)	Mean	95% CI*
(a) Sub-group analyses of health care costs.				
Sex			123.49**	21.83 to 267.91**
Male	34.78 (67.53)	34.83 (12.37)		
Female	155.17 (376.65)	158.32 (62.67)		
Living situation			72.45	−46.61 to 199.68
Alone	62.44 (202.92)	60.57 (42.51)		
Other	133.05 (329.93)	133.02 (46.31)		
Dutch language			−113.49**	−231.55 to −12.11**
Yes	156.33 (371.08)	153.41 (56.14)		
No	39.73 (103.78)	39.93 (18.28)		
Parental history of mental illness			−3.53	−125.97 to 153.96
Yes	106.79 (185.71)	107.83 (32.23)		
No	106.31 (365.16)	104.29 (60.59)		
(b) Sub-group analyses of truancy costs.				
Sex			−24.33	−328.38 to 259.17
Male	411.81 (611.13)	413.09 (118.32)		
Female	388.95 (590.75)	388.76 (95.70)		
Living situation			−589.56**	−985.34 to −190.84**
Alone	872.19 (807.37)	869.63 (194.73)		
With others	279.18 (410.70)	280.06 (58.16)		
Dutch language			88.31	−188.39 to 390.35
Yes	351.46 (533.81)	359.27 (87.37)		
No	448.48 (639.45)	447.59 (113.77)		
Parental history of mental illness			−182.59	−450.25 to 89.50
No	491.05 (690.41)	487.39 (114.10)		
Yes	306.31 (414.32)	304.81 (78.07)		
(c) Sub-group analyses of total costs.				
Sex			130.33	−187.54 to 465.65
Male	423.58 (605.96)	429.50 (120.86)		
Female	565.17 (700.13)	559.82 (116.40)		
Living situation			−542.40**	−985.47 to −115.76**
Alone	954.14 (871.23)	953.43 (208.17)		
Other	410.21 (484.88)	411.04 (75.79)		
Dutch language			−16.28	−330.31 to 284.84
Yes	510.71 (651.62)	516.54 (113.39)		
No	505.24 (649.24)	500.26 (110.75)		
Parental history of mental illness			181.47	−115.06 to 508.58
Yes	418.38 (451.58)	419.96 (86.34)		
No	602.82 (771.45)	601.43 (132.83)		

All costs in Euros; SD: standard deviation; CI: confidence interval; If CI includes 0, no significant difference is found. ** Significant difference.

(Byford, 2013). The impact on 'Usual activities' is also seen in the social and occupational impairment of the study population. Indeed, Chudleigh et al. (2011) has shown that those at risk for a psychotic episode have similar social impairments as patients, and significantly more than controls. This indicates that deficits in the ability of performing usual activities precede the diagnosis, and that our health care system should be focusing more on functional decline rather than diagnoses and disease specific symptoms only.

Since productivity losses are associated with work, absenteeism from school can be seen as loss of productivity in the educational sector. More than half of the first visitors of @ease skipped at least one day of school in the last three months, whereas in the general population, only 11–13% of the adolescents skipped at least one hour in the last month (Stevens et al., 2018; Vaughn et al., 2013). When comparing our study population to working people aged 15–25, our study mean of 4 days in three months is considerably higher than the general population mean of 3 days of absenteeism per year (Statistics Netherlands, 2020). It must be stated that research into truancy is mainly focussed on school aged children under the age of 18. Research into productivity

losses, on the other hand, is often targeting working adults, leaving adolescents attending universities (of applied science) in a vacuum of knowledge, emphasising the importance of studying young people throughout their development to young adulthood (Kwan & Rickwood, 2015). The difference between our population and the general population, however, is in line with previous research indicating that mental health problems increase the risk of truancy in adolescents (Schulte-Körne, 2016), and the relation between mental disorders and production losses in adults (De Graaf et al., 2011).

The total costs, corresponding to €2,050.56 per person per year, have a close similarity with the total costs of mental disorders in adults, ranging between €2000 and €3200 (Chevreul et al., 2013; Smit et al., 2006), and the ratio of productivity costs, with almost 80% of the total costs made by truancy (Chevreul et al., 2013; Jager et al., 2008; Lee et al., 2017; Smit et al., 2006).

Female sex showed to be a predictor for a higher burden in terms of utility and health care costs compared to the male sex, which is also found in the general population (De Graaf et al., 2010; Versteegh et al., 2016). Our results did

not confirm a positive relation between using any kind of care and living alone compared to living with a partner (idem). However, in our population, living alone was associated with more truancy costs than living with others. Last, higher health care costs in those who filled in the Dutch questionnaire may indicate that not speaking the Dutch language is an extra barrier for seeking or receiving professional help.

Strengths and limitations

This study has several strengths. To the best of our knowledge, this was the first study investigating the burden of mental health problems in youth, especially in those in need for help, and therefore seeking help at @ease. Second, while youngsters with mental health problems form a challenging population to motivate for participation, the response to our questionnaire was quite high and complete. Third, we used the prevalence-based, bottom-up approach, where cost units were collected on the individual level, for all cases in a specific time period. This bottom-up approach has more informative power than its opposite (top-down) (Tarricone, 2006). A prevalence-based, compared to an incidence-based approach, best met the aim of our study, to draw attention to the burden of mental health problems. Last, the study had a societal perspective, which is most comprehensive and meets the principal aim of a Burden of Disease study, measuring the impact on society as a whole (Jo, 2014; Tarricone, 2006).

There are some limitations to be considered. First, we used only self-reported data with retrospective questioning, which can lead to recall bias (Bowling, 2014). To minimise bias, the time reference period was set at three months. Second, the EQ-5D-5L is not specific for mental health problems, which makes it less sensitive to small, disease-specific effects. However, the use of this generic HRQoL measurement makes it possible to compare utilities with other general or patient populations (Drummond et al., 2015). Third, the items to measure the cost-of-illness were concise in order to limit the non-response, which led to less detailed and specific information, and thereby to a less precise estimation of costs. We had to make this choice to maintain the feasibility for our population of youth. During the study, there might have been a linguistic uncertainty of the questionnaire, as for a considerable group, nor Dutch or English was their mother language, which may rise questions about how participants interpreted the HRQoL and cost-of-illness items. In addition, we noticed the ambiguity of the term skipping school, as some interpreted this as absenteeism instead of truancy. This complicates the interpretation of our truancy costs.

Concerning the costs, a possible overestimation of costs should be considered. While absenteeism from school was asked, the compensation of this absenteeism, for example by catching up in the following weeks, was not measured. This might give an overestimation of the truancy costs. Moreover, it is debatable how to value skipping a day from school, as this does not lead to direct production losses, like skipping work does, nor leads directly to repeating a class.

However, it does have an impact on the development of the youngster, with possible long-term effects (Theunissen-Lamers, 2016) and is an expression of the experienced burden. The valuation of absenteeism from school is still experimental, with less clear guidelines as for absenteeism from work. In our opinion, we have selected the most appropriate method to value truancy. Last, it might be argued that due to fluctuations in symptoms, calculation annual costs by multiplying the costs of three months by 4, might not be representative. On the other hand, the costs are calculated as an average of all youngsters in our study population and therefore also fluctuations within persons might be averaged.

There are also indications that we underestimated costs. The item about truancy can be interpreted as contact hours, while self-study, especially for those at university, is as important for their development. In addition, 9% of our population was not involved in any form of education, and therefore their truancy or absenteeism was not assessed, neither did we assess possible productivity losses by parents or caregivers of the youngsters in our population. Given the decrease in HRQoL in our population, we expect the proportion of health care use, and thereby costs, to even increase after their first visit to @ease, as for a great part of the participants, the visit to @ease was the first step in seeking help. Last, when looking at health care costs, we included the visits to a mental health care professional, thereby excluding additional diagnostics, therapies, and medication.

It can be considered unexpected that we found no significant correlation between the decreased QoL and total costs in our study. Improving QoL might therefore, not directly reduce costs. Young people with mental health problems, however, almost always experience comorbid psychosocial or environmental difficulties (Leijdesdorff et al., 2020). Interventions should therefore not only target QoL, but should focus broader on improving well-being and resilience with a multidisciplinary approach, aiming to decrease the individual as well as societal burden.

Implications for clinical practice and research

This study indicates the severity of the burden that mental health problems have on youth visiting @ease and draws attention to the fact that intervening in this early stage matters, not only to reduce the burden of mental health problems at this moment, but also to prevent the individual and economic burden from persisting or escalating later on in life. This underlines the importance of having the right intervention, for the right person, at the right place and at the right time.

Further research into the burden of mental health problems in youth, especially with a direct comparison with the healthy population could increase the knowledge of this right intervention, person, place, and time. Follow-up studies of the population visiting @ease, describing the development of their burden over time, will follow. In conclusion, the extent of the burden of mental health problems for

youth visiting @ease emphasizes the need for youth-appropriate early interventions in mental health.

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Disclosure statement

All authors, apart from the last author, were involved in the @ease Foundation, either as staff, volunteer, management and/or advisory board member.

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