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Evaluating changes in functioning and psychological distress in visitors of the @ease youth mental health walk-in centres

Anouk Boonstra, Therese A. M. J. van Amelsvoort, Rianne M. C. Klaassen, Arne Popma, Nina H. Grootendorst-van Mil, Wim Veling, Remco F. P. de Winter, Nynke Boonstra and Sophie M. J. Leijdesdorff

Background

Highly accessible youth initiatives worldwide aim to prevent worsening of mental health problems, but research into outcomes over time is scarce.

Aims

This study aimed to evaluate outcomes and support use in 12- to 25-year-old visitors of the @ease mental health walk-in centres, a Dutch initiative offering free counselling by trained and supervised peers.

Method

Data of 754 visitors, collected 2018–2022, included psychological distress (Clinical Outcomes in Routine Evaluation 10 (CORE-10)), social and occupational functioning (Social and Occupational Functioning Assessment Scale (SOFAS)), school absenteeism and support use, analysed with change indicators (first to last visit), and mixed models (first three visits).

Results

Among return visitors, 50.5% were female, 79.4% were in tertiary education and 36.9% were born outside of The Netherlands (one-time visitors: 64.7%, 72.9% and 41.3%, respectively). Moreover, 29.9% of return visitors presented with suicidal ideations, 97.1% had clinical psychological distress levels, and 64.1% of the latter had no support in the previous 3 months (one-time visitors: 27.2%, 90.7% and 71.1%, respectively). From visit 1 to 3, psychological distress decreased ($\beta = -3.79$, 95% CI -5.41 to -2.18 ;

$P < 0.001$) and social and occupational functioning improved ($\beta = 3.93$, 95% CI 0.51 – 7.36 ; $P = 0.025$). Over an average 3.9 visits, 39.6% improved reliably and 28.0% improved clinically significantly on the SOFAS, which was 28.4% and 8.8%, respectively, on the CORE-10, where 43.2% improved in clinical category. Counselling satisfaction was rated 4.5/5.

Conclusions

Reductions in psychological distress, improvements in functioning and high counselling satisfaction were found among @ease visitors, forming a basis for future research with a control group.

Keywords

Youth mental health; young people; adolescents; early intervention; mental health services.

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Among young adults aged 18–24 years in The Netherlands, 55.2% have had a mental disorder in their lifetime¹ and 39.6% in the past 12 months.^{1,2} In the younger age group of high school students, 30.5% report mental health problems.³ Mental disorders emerge early on, with 62.5% presenting before 25 years of age and 48.4% presenting before 18 years of age.⁴ Young adulthood is a highly turbulent time, with many life changes⁵ and sensitive periods in brain development.⁶ Consequentially, young people with psychiatric diagnoses face more negative outcomes compared with those without mental health problems.^{7,8} Given the vulnerability, mental healthcare should be particularly well-organised for 12- to 25-year-olds. In reality, many barriers hinder service access,^{9,10} including long waiting lists, a difficult pathway to care and a division between child and adolescent mental health services and adult mental health services that is often set at the age of 18 years.^{11,12}

Early and accessible youth mental health initiatives

Early intervention without harmful services transition is of major importance in promoting healthy development, as acknowledged globally, with consensus regarding the importance of youth participation, community engagement and soft entry to care.¹³ Youth mental health initiatives focused on youth-friendly and accessible care have been launched worldwide.¹⁴ In practice, these initiatives

offer timely, youth-oriented, holistic and affordable or cost-free care.^{11,15,16} In addition, peer support is a practice by which barriers might be broken down further.¹³

Accordingly, the Dutch youth-initiative ‘@ease’ opened its first two centres in 2018, and 12 centres nationally by mid-2023 (www.ease.nl). @ease provides a safe space for young people aged 12–25 years to talk about their mental health problems or related concerns. Young people can visit anonymously without an appointment during opening hours, and are welcomed in a youth-friendly environment by two trained peer counsellors. To coach and advise the peer counsellors, a healthcare professional is on site and a psychiatrist is on call. These professionals are not physically present in the conversation when the peer counsellors speak with a young person, except in cases of risk. Peer counsellors are trained in active listening, solution-focused strategies, motivational interviewing, suicide prevention, noticing when other forms of care might be required and informing the young person how to access other services. In this manner, @ease delivers an early and accessible setting where young people are actively listened to, and receive support to improve resilience and prevent worsening of existing symptoms.^{17,18}

Worldwide research findings

Innovative youth mental health initiatives thus proactively respond to the dire need for accessible youth support,^{11,14} but few studies have

reported mental health outcomes over time in their patients.^{19–22} The organisations headspace Australia and Jigsaw Ireland have published outcome evaluation analyses, comparing first and last visit data.^{19–21} Among young people who sought support from headspace Australia, 29.9% improved reliably (37.8% clinically significantly) in terms of social and occupational functioning, and 24.5% improved reliably (22.4% clinically significantly) regarding psychological distress.²¹ Jigsaw Ireland reported that 62% of the young people who used their service improved clinically significantly and reliably with regard to psychological distress.¹⁹ Furthermore, Youth Information, Advice and Counselling Services (YIACS) across England reported that 52.2% improved reliably and 29.4% clinically significantly with regard to psychological distress (Clinical Outcomes in Routine Evaluation 10 [CORE-10]), which was 37.2% and 36.4%, respectively, for the Young Person's CORE (YP-CORE).²²

Research at @ease

Research into @ease itself is relevant, offering new insights, given its innovative working method solely encompassing peer support, partially by peer counsellors with lived experience, offering walk-in counselling centred on active listening. The study intervention at the YIACS in England was delivered by graduated counsellors and psychotherapists who offered person-centred and humanistic counselling, usually weekly.²² Moreover, headspace Australia and Jigsaw Ireland often provided cognitive-behavioural therapy-based interventions.^{19,21} In contrast, @ease does not provide protocol-based or a number of treatment sessions with the same counsellor. Instead, the trained age-peer counsellors who are available at that moment actively listen to young people who can visit once or decide to return later. However, the organisations overlap with regard to their use of general supportive counselling, and Jigsaw Ireland and @ease overlap in terms of a central solution focus.

Research at @ease so far has shown that the majority of young people presented with concerning levels of psychological distress and suboptimal social and occupational functioning, and rated their first (or sole) @ease counselling session as satisfactory to very satisfactory.¹⁸ As @ease expands within and over locations, the provided service must be continuously evaluated and improved based on the input of visitors, also given the increasing demand for mental health support within the transition age. This first outcome evaluation, of the first five operational years of @ease, addressed the research question, 'To what extent have psychological distress, social and occupational functioning, school absenteeism and (mental health) support use changed over time among @ease visitors?'

Method

The @ease evaluation studies have been approved by the Medical Ethical Committee of Maastricht University (number 2017–0046).

Procedure and materials

Young people can freely walk into the @ease centres, where they are received by two peer counsellors. Further details have been described in a working method article and protocol.^{17,18} At the end of each visit, young people are asked for consent to fill out a 5 min questionnaire on a tablet device. The ethical committee approved that a record was not required as the anonymous evaluative aims of the questionnaire were clearly stated, the survey was only offered to the young person upon verbal consent, the young person could refuse at any time and additional forms would add more unwanted barriers for the young people. The present study included @ease visitors from 2018 to the end of

2022 who filled out the questionnaire, which included demographics, reasons for visiting, whether one, both or none of their parents had mental health problems, and which kind.

The CORE-10 was used to measure psychological distress, with satisfactory psychometric properties and a total score between 0 and 40, with a clinically significant cut-off of ≥ 11 .^{23,24} Clinical categories were severe (scores of ≥ 25), moderate to severe (20–24), moderate (15–19), mild (11–14), low (6–10) and healthy (0–5); respondents could improve, worsen or stay constant over time. The Reliable Change Indicator (RCI) was a minimal improvement of six points, as done by Jigsaw Ireland.¹⁹ Additionally, it was asked whether and how often young people had skipped school days and had used a form of (mental health) support in the past 3 months.

The second part of the questionnaire was filled out by the peer counsellors, addressing suicidal ideation and plans, as well as follow-up plans for future support. Peer counsellors also rated the Social and Occupational Functioning Assessment Scale (SOFAS),²⁵ a single score between 0 and 100, where 100 means superior functioning, every tenth score has a description and every fifth score can be chosen. A minimum improvement of ten points was considered reliable change (RCI = 10) and the cut-off for clinically significant improvement (CSI) was applied to the SOFAS as done by headspace Australia (CSI = 69).^{20,21}

Participants

Data were included for visitors aged 12–30 years. Although @ease is mainly intended for young people of 12–25 years of age, slightly older youth may also visit, which is only evident afterward in the questionnaires as age is not asked face to face, to ensure anonymity. It was ethically preferred to include data for young people aged 25–30 years, given the acceptable closeness to the age range. From the initial 772 visitors, 12 participants were excluded as they were not aged 12–30 years. When visitors filled out questionnaire(s) but skipped the first one, an empty entry was created as first visit, to register total visits. Six young people were excluded as they did not fill out questionnaires at any point; only the peer counsellors partially filled out the peer-rated elements at subsequent visits, making it impossible to link visits to each other. Hence, questionnaires for 754 young people were included.

Analyses

The RCIs and CSIs were applied as specified under materials. Other RCIs and CSIs have been specified for those under 16 years of age when using the YP-CORE.²⁶ This study did not use the YP-CORE, but percentages of change were additionally explored with the age- and gender-adjusted RCIs and CSIs for visitors under 16 years of age, to inspect whether results would differ compared with using the CORE-10 RCI and CSI.

Analyses were performed with Stata 13 for Windows (descriptively) and IBM SPSS Statistics (version 27 for Windows). Descriptive analyses, t-tests and X^2 -tests were run to describe and compare respondents' characteristics ($\alpha = 0.05$). Psychological distress (CORE-10), social and occupational functioning (SOFAS), and school absenteeism and mental health support in the past 3 months were analysed via mixed-effects regression analyses, which deal best with missing data as young people were allowed to skip questions and had unequal total visits. Models were each run with fixed effects of time points (visits), controlled for age, gender and total visits. All models compared the first three visits of those who visited three times or more, because the sample size over more visits was not yet large enough by end of 2022 to analyse ($n = 14$ for four visits, $n = 5$ for eight visits, $n = 6$ for five visits and $n = 13$ for more visits). Age was centred on the mean age.

Sensitivity analyses were used to evaluate if declines differed between total visits, and whether effects were also seen when weeks between visits were controlled for. Whether young people had skipped school days and received support was also measured in a binary fashion, and was therefore each analysed with binary logistic generalised mixed models.

Results

Characteristics

Between January 2018 and December 2022, 754 young people filled out @ease questionnaires, of which 586 (77.7%) had visited once and 168 (22.3%) had visited repeatedly. The average number of visits was 1.65 among all 754 visitors (s.e. = 0.15) and 3.90 (s.e. = 0.66) among 168 return visitors. Specifically, 109 young people visited twice and 59 visited three times or more. The second session was on average 12 weeks after the first session (range of 0–195 weeks) and the third session was on average 9 weeks after the second session (range 0–71 weeks). The third session was on average 17 weeks after the first session (range 1–132 weeks).

Satisfaction with the @ease visit was rated 4.5 out of 5 on average; 59.8% were very satisfied, 33.5% were satisfied, 4.2% were

neutral and 2.5% were not satisfied. As shown in Table 1 (see the table footnote), the majority were aged 18–25 years and female, but the proportion of males was closer to that of females among return visitors. Those who visited once were significantly younger (mean 19.98, s.d. = 3.53) than those returning (mean 20.85, s.d. = 3.31) ($t(162.40) = -2.42, P = 0.017$) when analysed continuously, not per age group ($P = 0.098$). The majority reported following tertiary education and living with their parents, with peers or alone.

A third reported having one or two parents with mental health problems. Of these, 53.8% reported maternal depressive disorder, followed by anxiety disorders (9.9%). For fathers, the most reported disorders were depressive disorders (36.7%), addiction (16.3%) and trauma-related disorders (10.2%).

A total of 41.3% of one-time visitors and 36.9% of return visitors were born outside of The Netherlands, in over 60 different countries, often studying abroad in The Netherlands. The most-represented countries of birth were Germany ($n = 50, 8.8%$), Italy ($n = 14, 2.5%$), Belgium ($n = 13, 2.3%$), Romania ($n = 11, 1.9%$), the USA ($n = 11, 1.9%$) and the UK ($n = 10, 1.8%$). The majority were born in Europe (85.4% of one-time visitors and 87.5% of return visitors).

The primary reasons for visiting @ease are shown in Table 2. The presence or absence of suicidal ideations and suicidal plans in

Table 1 Characteristics of young people who visited @ease

		<i>n</i> (%)		χ^2 and <i>P</i> -values	
		Visited once	Returned		
Age group ($n = 587$)	12–14 years	33 (6.9)	4 (3.6)	$\chi^2(4) = 7.84,$ $P = 0.098$	
	15–17 years	77 (16.2)	14 (12.6)		
	18–20 years	157 (33.0)	32 (28.8)		
	21–25 years	186 (39.1)	55 (49.6)		
	26–30 years	23 (4.8)	6 (5.4)		
Gender ($n = 614$)	Female	327 (64.7)	55 (50.5)	$\chi^2(2) = 8.44,$ $P = 0.015$	
	Male	168 (33.3)	49 (44.9)		
	Non-binary	10 (2.0)	5 (4.6)		
Living situation ($n = 619$)	Parents	198 (39.1)	37 (32.7)	$\chi^2(8) = 10.92,$ $P = 0.206$	
	Caregiver	8 (1.6)	0 (0.0)		
	Peers	139 (27.5)	32 (28.3)		
	Alone	116 (22.9)	32 (28.3)		
	Partner	25 (4.9)	5 (4.4)		
	Homeless	3 (0.6)	0 (0.0)		
	Staying over	5 (1.0)	2 (1.8)		
	Assisted	4 (0.8)	4 (3.5)		
	Other	8 (1.6)	1 (0.9)		
Parental mental health problems ($n = 570$)	Mother only	78 (16.7)	18 (17.3)	$\chi^2(3) = 4.84,$ $P = 0.184$	
	Father only	38 (8.2)	15 (14.4)		
	Both parents	37 (7.9)	10 (9.6)		
	None	313 (67.2)	61 (58.7)		
Occupation ($n = 611$)	Education	374 (75.3)	76 (66.7)	$\chi^2(3) = 7.22,$ $P = 0.065$	
	Work	45 (9.0)	11 (9.6)		
	Both	43 (8.7)	11 (9.6)		
	None	35 (7.0)	16 (14.0)		
Current education ($n = 517$)	Primary education	Primary school	4 (0.9)	0 (0.0)	$\chi^2(6) = 3.17,$ $P = 0.787$
	Secondary education	Pre-vocational education	31 (7.3)	3 (3.3)	
		Higher vocational education	31 (7.3)	7 (7.6)	
		Preparatory scientific education	49 (11.5)	9 (9.8)	
	Tertiary education	Vocational education	43 (10.1)	10 (10.9)	
		Applied sciences	72 (16.9)	19 (20.7)	
University		195 (45.9)	44 (47.8)		
Country of birth ($n = 603$)	The Netherlands	289 (58.7)	70 (63.1)	$\chi^2(1) = 0.70,$ $P = 0.402$	
	Other country	203 (41.3)	41 (36.9)		
Continent of birth ($n = 569$)	Europe	404 (85.4)	84 (87.5)	$\chi^2(5) = 2.29,$ $P = 0.808$	
	Asia	40 (8.5)	8 (8.3)		
	North America	13 (2.7)	2 (2.1)		
	South America	7 (1.5)	1 (1.0)		
	Africa	9 (1.9)	1 (1.0)		

The total of each characteristic is not equal to the total visitors (586 one-time visitors and 168 return visitors) or equal in every characteristic, because young people were allowed to skip questions and questionnaires, thereby maintaining full authority, safety and the lowest burden possible.

	n (% that answered yes)	
	Visited once	Returned
My feelings	365 (75.7)	84 (81.6)
Social relationships	148 (30.7)	30 (29.1)
Education/work	105 (21.8)	19 (18.4)
Drugs/alcohol	32 (6.7)	4 (3.9)
Physical health	15 (3.1)	5 (4.9)
Sexuality	30 (6.2)	1 (1.0)

Multiple answers could be marked by each individual.

the @ease visitors is shown in Table 3, as reported by their peer counsellors.

Correlations of outcome measures

Psychological distress and social and occupational functioning were negatively and moderately correlated among one-time visitors ($r = -0.43$, $P < 0.001$) and return visitors (visit 1: $r = -0.39$, $P < 0.001$; visit 2: $r = -0.40$, $P < 0.001$; visit 3: $r = -0.65$, $P < 0.001$). The internal consistency of the items within the CORE-10 was excellent in the administered @ease questionnaires (one-time visitors: $\alpha = 0.83$; return visitors visit 1: $\alpha = 0.77$, visit 2: $\alpha = 0.83$, visit 3: $\alpha = 0.86$). Mental health support and school absenteeism in the past 3 months were not significantly correlated for return visitors (visit 1: $r = 0.05$, $P = 0.657$; visit 2: $r = 0.01$, $P = 0.956$; visit 3: $r = 0.06$, $P = 0.723$) and weakly for one-time visitors ($r = 0.28$, $P < 0.001$). The only other correlations found were between school absence days and SOFAS score at visit 1 among return visitors ($r = -0.44$, $P < 0.001$), and between school absence days and psychological distress at visit 3 ($r = 0.47$, $P < 0.01$).

Clinical and reliable change from first to last @ease visit

At first visit, 90.7% of all respondents and 97.1% of the return visitors presented with clinically significant levels (CORE-10 score ≥ 11) for psychological distress. Among return visitors, 39.1% scored in the clinical category severe, 27.6% for moderate to severe, 20.0% for moderate, 9.5% for mild and 3.8% for non-clinical. Young people presented with a high average level of psychological distress (mean 20.23, s.d. = 6.90). Of those who answered the CORE-10 at the first and last visit ($n = 95$), 28.4% improved reliably (decline of ≥ 6 points), 6.3% deteriorated reliably (increase of ≥ 6 points) and 65.3% did not change reliably, as they changed by < 6 points.

Changes mostly occurred over a short period of time, as 49.1% made their last visit within 6 weeks of their first visit, and over few visits, as 65.3% of return CORE-10 respondents had made a total of two to three visits. In this period, 43.2% improved to a better clinical category and 36.8% remained in the same category. Among those answering the CORE-10 at first and last visit, 88.4% ($n = 91$)

	Visited once ($n = 404$), n (%)	Returned ($n = 109$ visit 1–2, $n = 59$ visit 3), n (%)		
		Visit 1 ($n = 77$)	Visit 2 ($n = 93$)	Visit 3 ($n = 41$)
Suicidal ideation				
No	294 (72.8)	54 (70.1)	64 (68.8)	31 (75.6)
Yes	110 (27.2)	23 (29.9)	29 (31.2)	10 (24.4)
Yes, without plans	80 (19.8)	13 (16.9)	18 (19.4)	8 (19.5)
Yes, with plans	30 (7.4)	10 (13.0)	11 (11.8)	2 (4.9)

n is the number of times the question was answered in that group at that time point.

scored ≥ 11 on the CORE-10 at visit 1. Of them, 8.8% improved clinically significantly, from a score of ≥ 11 to one of < 11 .

Among CORE-10 respondents at first and last visit, eight young people were under the age of 16 years. After applying the age- and gender-specific CSIs and RCIs for those under age 16 years (intended for the YP-CORE),²⁶ the reliable changes reported above did not change for these eight young people, and clinically significant changes were unchanged for six young people. Two females aged 14–16 years (cut-off 15.9)²⁶ changed clinically: one improved and one deteriorated.

Among those for whom the peer counsellors answered the SOFAS at both first and last visit ($n = 53$), 39.6% improved reliably (minimum of 10-point increase), 24.5% had a decrease in score by a minimum of 10 points (half of them exactly by 10 points), and 35.8% did not change reliably, as their score changed by < 10 points. Furthermore, 47.2% of the respondents scored under the cut-off at visit 1. Of them, 28.0% improved clinically significantly.

Change over the first three @ease visits

Psychological distress

Average psychological distress scores of the @ease visitors at the various time points are shown in Fig. 1. Mixed-effects linear regression was modelled on all visitors ($N = 754$); the random intercept model was superior, improving with the addition of each fixed effect ($P < 0.000$). At the second visit, psychological distress was 2.47 points lower than at first visit ($P < 0.001$), and at the third visit, psychological distress was 3.79 points lower than at first visit ($P < 0.001$) (Table 4). Males had lower psychological distress than females ($P = 0.001$). Psychological distress was initially highest for those who visited most often ($P < 0.001$), as seen in Fig. 1.

The parallel lines in Fig. 1 suggest that declines in distress were identical regardless of total visits. Indeed, sensitivity analysis showed that the interaction between total number of visits and separate visits was non-significant ($P = 0.499$). Also, effects remained when correcting for the weeks between the visits (visit 1–3: $\beta = -4.63$, s.e. = 0.96, $t = -4.82$, 95% CI -6.53 to -2.74 , $P < 0.001$; visit 1–2: $\beta = -2.95$, s.e. = 0.68, $t = -4.35$, 95% CI -4.29 to -1.61 , $P < 0.001$).

Social and occupational functioning

Young people presented with a mean social and occupational functioning score of 65.70 (s.d. = 14.34). The superior model on all visitors ($N = 754$) was the random intercept model, which improved with the addition of each fixed effect ($P < 0.000$). Social and occupational functioning improved by 3.93 points from visit 1 to 3 ($P = 0.025$) (Table 5). Initial social and occupational functioning did not significantly differ with regard to age, gender or the total number of visits made. Sensitivity analysis showed that declines in functioning were the same regardless of total number of visits ($P = 0.329$), and outcomes remained after correcting for the weeks between the visits (visit 1–3: $\beta = 4.22$, s.e. = 2.02, $t = 2.09$, 95% CI 0.22 – 8.23 $P = 0.039$; visit 1–2: $\beta = 2.64$, s.e. = 1.49, $t = 1.77$, 95% CI -0.32 to 5.61 , $P = 0.080$).

School absenteeism

Two entries of school absenteeism were recoded as missing because these visitors were unable to attend school in the past 3 months, as they reported to be refugees. Two other impossibly high number of days were changed to the maximum of 60.

Among one-time visitors, 34.0% had been absent from school in the past 3 months and the average of absent days was 2.87. For return visitors, absence from school was 43.8% at the first visit (mean 3.10 days), 35.2% at the second visit (mean 3.04 days) and

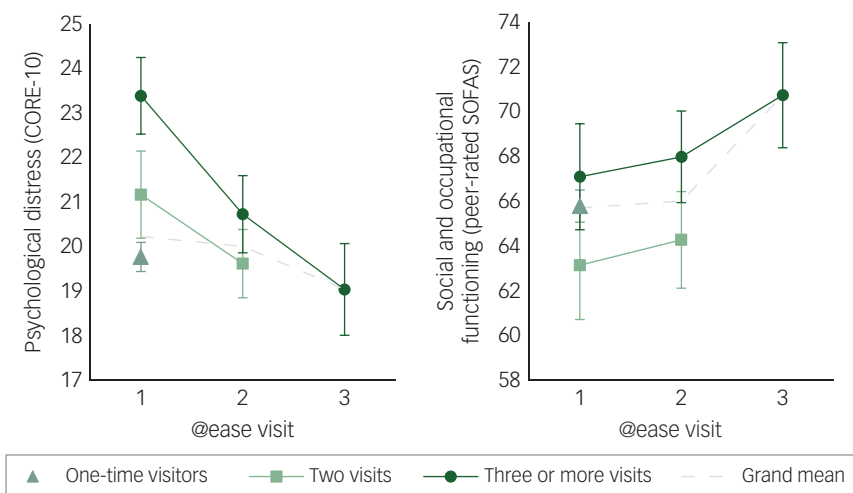


Fig. 1 Average point plots of the self-rated CORE-10 (range 0–40) and peer-rated SOFAS (range 0–100), by visits. CORE-10, Clinical Outcomes in Routine Evaluation 10; SOFAS, Social and Occupational Functioning Assessment Scale.

16.7% at the third visit (mean 2.07 days). Among those who visited at least three times, the absolute percentage of young people who were absent from school declined by 29.2% from the first to third visit. Among the average high school age of 12–18 years, school absenteeism occurred in 31.7% in the past 3 months.

Results of the binary logistic generalised mixed model on all visitors showed that the odds of having been absent from school before a visit did not decrease significantly by visit 3 ($P = 0.052$) (visit 1–3: $B = -1.06$, $s.e. = 0.55$, $t = -1.95$, $\text{Exp}(B) = 0.35$, 95% CI 0.12–1.00). The number of school absenteeism days did not change significantly between the first three visits (visit 1–3: $\beta = -0.23$, $s.e. = 1.05$, $t = -0.22$, 95% CI -2.30 to 1.85 , $P = 0.829$; visit 1–2: $\beta = 0.11$, $s.e. = 0.79$, $t = 0.14$, 95% CI -1.46 to 1.69 , $P = 0.886$).

Mental health support

Throughout the 3 months before visiting @ease for the first time, 131 (27.8%) one-time visitors and 34 (34%) return visitors had received a form of mental health support, e.g. from a school-based adviser, mentor, therapist, community worker or other professional. The odds of having received support before visit 2 were 2.19 higher than before visit 1 (95% CI 1.17–4.07, $B = 0.78$, $s.e. = 0.32$, $t = 2.47$, $P = 0.014$). At the third visit, the odds of having received support were 2.49 higher than at first visit (95% CI 1.08–5.71, $B = 0.91$, $s.e. = 0.42$, $t = 2.15$, $P = 0.032$). The number of days that this support was received was 2.74 days higher in the 3 months before the third @ease visit than before the first visit ($s.e. = 0.88$, $t = 3.13$,

95% CI 1.02–4.47, $P = 0.002$), with non-significance for confounders and differences between first and second visit ($\beta = 0.83$, $s.e. = 0.66$, $t = 1.26$, 95% CI -0.47 to 2.13 , $P = 0.210$).

Among those who scored above the cut-off of clinical psychological distress in the week before their first visit, 71.1% of one-time visitors and 64.1% of return visitors had not received any form of support in the past 3 months. Furthermore, among young people with suicidal ideation, 65.5% of one-time visitors and 57.1% of return visitors had received no form of support in the past 3 months. For 36 visitors, support use changed over time, whereas it remained stable for the other 65 (37 without support and 28 with support). Ten young people went from using support to no longer using a form of support. Five young people received support for the first time before their third @ease visit, and 21 for the first time by the second @ease visit. Nine of those 21 young people still received support at the third visit, and support use was unknown for 12 people at the third visit.

Follow-up plans

Peer counsellors indicated for 13 return visitors (19.5%) and 105 one-time visitors (28.3%) that they planned to have an appointment with a general practitioner (GP) or psychologist after their first or sole @ease visit (Table 6). Furthermore, the peer counsellors had reported in the open-text field of 28 one-time visitors (31.5% of those seeking 'other support') that they planned to return to @ease. Other plans written under 'other support' included seeing

Table 4 Multilevel mixed-effects linear regression on psychological distress (CORE-10)

	CORE-10 β	s.e.	t	P -value	95% CI
Intercept	20.33	0.40	50.61	<0.001	19.54–21.12
@ease visit 2	-2.47	0.61	-4.04	<0.001	-3.68 to -1.26
@ease visit 3	-3.79	0.82	-4.65	<0.001	-5.41 to -2.18
@ease visit 1 (reference)	-	-	-	-	-
Age	0.18	0.09	2.05	0.041	0.01–0.36
Non-binary gender	2.31	1.80	1.29	0.199	-1.22 to 5.85
Male gender	-2.20	0.63	-3.21	0.001	-3.26 to -0.78
Female gender (reference)	-	-	-	-	-
Made two visits	1.59	0.97	1.64	0.102	-0.32 to 3.51
Made three or more visits	3.87	1.01	3.83	<0.001	1.89–5.86
Made one visit (reference)	-	-	-	-	-

CORE-10, Clinical Outcomes in Routine Evaluation 10.

Table 5 Multilevel mixed-effects linear regression on social and occupational functioning (SOFAS)

	SOFAS β	s.e.	<i>t</i>	<i>P</i> -value	95% CI
Intercept	67.31	0.95	70.92	<0.001	65.44–69.17
@ease visit 2	2.48	1.37	1.81	0.073	–0.24 to 5.19
@ease visit 3	3.93	1.73	2.28	0.025	0.51–7.36
@ease visit 1 (reference)	–	–	–	–	–
Age	–0.15	0.22	–0.68	0.495	–0.57 to 0.28
Non-binary gender	–2.67	4.20	–0.64	0.525	–10.93 to 5.59
Male gender	–2.04	1.48	–1.38	0.170	–4.96 to 0.88
Female gender (reference)	–	–	–	–	–
Made two visits	–2.66	2.35	–1.13	0.260	–7.28 to 1.97
Made three or more visits	–0.56	2.21	–0.25	0.799	–4.91 to 3.78
Made one visit (reference)	–	–	–	–	–

SOFAS, Social and Occupational Functioning Assessment Scale.

a study adviser ($n = 9$), family member ($n = 5$), school psychologist ($n = 4$), mentor ($n = 3$), care coordinator ($n = 3$), job coach ($n = 2$), psychiatrist ($n = 1$), or a specific organisation (all $n = 1$) such as a centre for sexual violence or financial guidance, housing guidance or a legal desk.

For return visitors, returning to @ease was written in the open-text field ten times at visit 1 (58.8% of ‘other support’), ten times at visit 2 (55.6% of ‘other support’) and four times at visit 3 (50.0% of ‘other support’). It is unknown whether the intention to return to @ease might have also been the case for others. Among return visitors, other plans in the open-text field included going to a centre for sexual violence ($n = 3$), study adviser ($n = 2$), school psychologist ($n = 2$), psychiatrist ($n = 2$) or a health education agency ($n = 1$).

Discussion

The present outcome evaluation revealed that psychological distress and social and occupational functioning improved over time in visitors of the @ease youth walk-in centres for peer counselling. Given the high prevalence of mental health problems among young people²⁷ and barriers to standard services,⁹ highly accessible initiatives fill an important gap, and studying outcomes over time is important to evaluate and improve these initiatives.¹⁴ The present study was the very first exploration of changes in psychological distress, functioning, support use and school absenteeism among @ease visitors, forming a basis for future research.

Initial psychological distress was clinically high in over 90% of @ease visitors throughout the current five operational years of @ease, as it was in the first 2 years.¹⁸ High psychological distress in young people has been associated with twice as much help-seeking compared with those with low distress.²⁸ As such, it would be expected that @ease mostly sees youth with high levels of distress.

Average levels of psychological distress at @ease visit 1 (19.8 for one-time visitors and 22.2 for return visitors), resembled initial levels at Jigsaw Ireland (19.7 CORE-10 score; 19.4 YP-CORE score),¹⁹ and the YIACS (21.5 CORE-10 score; 20.9 YP-CORE

score).²² Changes over time cannot be compared directly yet, because of differences in the number of visits and the analyses. However, at @ease, psychological distress had decreased by 2.5 points by visit 2 and 3.8 points by visit 3, with 28.4% improving reliably and a small number improving in terms of CSI. At Jigsaw Ireland, 62% improved reliably and clinically significantly, whereas 22% improved reliably on the CORE-10, from first to last session, over up to six sessions.¹⁹ Compared with @ease, more sessions were also provided at the YIACS in England (range: 1–47, an average of 5.6), where 29.4% showed clinically significant change and 52.2% improved reliably on the CORE-10 (36.4 and 37.2% on the YP-CORE, respectively).²² headspace Australia also analysed psychological distress, but they used the K10 questionnaire.^{20,21}

Outcomes on the SOFAS showed that young people experienced problems in the social and work/study domain. This reflects commonly heard topics at @ease, including loneliness and difficulties in coping with experienced demands. Relatedly, topics most frequently marked as applicable were personal feelings, social relationships and education/work. Comparing first and last @ease visit, 39.6% of young people improved reliably and 28.0% improved clinically significantly on the SOFAS. In comparison, headspace Australia found reliable change on the SOFAS in 29.9% of young people and clinically significant change in 37.8%.²¹ Improvements in mean profiles over time were comparable between headspace Australia and @ease. As such, although the services and visitors differ in various ways and @ease has existed for a shorter period of time with a comparatively small study sample, improvements appear to be similar.

School absenteeism was common, as 34.0% of one-time visitors and 43.8% of return visitors had missed school for at least one day in the 3 months before first visiting @ease (31.7% for those aged 12–18 years). In comparison, general population data showed that 11% missed school at least once in the past two weeks (age 15 years)²⁹ and 18% missed at least 1 h in the past month (age 12–18 years).³ Among all @ease respondents, the average number of missed school days and percentage of young people missing school did not decline significantly. Absolute percentages of absenteeism showed a steep decrease for those visiting three or more times, which might become clearer in future analyses including a larger sample and more visits. Additional analyses will be conducted with regard to risk factors of costs related to school absenteeism within the @ease population.¹⁷ It is unknown whether young people interpreted ‘skipping school’ as general absenteeism or only as truancy, thus having been absent illegally or unjustifiably. Truancy might also be a less accurate term at tertiary education levels if attendance is less often or not mandatory, or when the education largely consists of self-study. Hence, instead of truancy, the broader term of school absenteeism was employed to describe skipping school days.

Table 6 Follow-up plans after @ease

Plans to visit a:	Visited once ($n = 371$), n (%)	Returned, n (%)		
		Visit 1 ($n = 67$)	Visit 2 ($n = 84$)	Visit 3 ($n = 36$)
General practitioner	53 (14.3)	6 (9.0)	6 (7.1)	2 (5.6)
Psychologist	52 (14.0)	7 (10.5)	14 (16.7)	5 (13.9)
Other support	89 (24.0)	17 (25.4)	18 (21.4)	8 (22.2)
None	177 (47.7)	37 (55.2)	46 (54.8)	21 (58.3)

 n is the number of times the question was answered in that group at that time point.

The high distress, impaired functioning and school absenteeism might be related factors, about which future analyses could offer informative implications. The @ease counsellors focus on strengthening positive factors such as functioning, while allowing distress to be felt and discussed. This is in contrast with the earlier focus of mental healthcare on diagnosing and treating mental disorders without focusing on strengthening positive factors. The motivational and solution-focused working method at @ease includes activating visitors in terms of (social) participation, opportunities and alternate coping strategies. Moreover, opening up to a peer may be a positive social experience in itself. Over time, young people seem to experience less distress and better functioning, which is of great importance for this age group, in which participation is vital to follow an education and build a support base.

The burden of mental health problems of @ease visitors was high, as discussed. Yet, the majority of young people with clinical distress in the past week and/or suicidal ideations at the time of presenting to @ease had not received support in the past 3 months. The need could have arisen recently, meaning @ease was accessed straightforwardly, but @ease could also be their first sought support for longer-existing problems. In practice, young people often indicate that formal treatment has long waiting lists and other barriers,⁸ during which young people can visit @ease as well.

The number of support days increased, which could relate to the help @ease offers in accessing services and lowering the barriers to do so, including the encouragement of opening up about mental health. Support use plans included returning to @ease, seeking study-related support (e.g. with a study adviser, school psychologist or mentor) or using a specialist service (e.g. for housing or abuse). Around half of the @ease visitors did not plan on finding any support after visiting @ease, either once or repeatedly. Other care might not have been required after visiting @ease; it is yet unknown how many young people would have received another form of care if they had not found @ease, and were thus prevented from requiring other care. If so, this could reduce pressure on other services and lengthy waiting lists.

The walk-in centres are intended for young people to visit when they have been feeling low or need someone who listens. This non-committal atmosphere is reflected in the large number of young people who visited once. They reported high satisfaction with the @ease conversation and most did not intend to seek other care. However, the present study does not yet provide insight into how one-time visitors were doing after visiting. Follow-up evaluations are a priority and are currently being collected, for one-time visitors and return visitors. Upon follow-up, all are asked to reflect on their @ease visit as well. This first exploration was purely possible over actual visits, providing first insights into @ease visitors' mental well-being over time.

Implications

Many @ease visitors were aged 18–25 years and studying (abroad) at a university in The Netherlands. This is a natural result of @ease first having started up in two university cities with many international students born in countries all over the world. However, @ease aims to be highly accessible for all young people, and is presently expanding to other areas with other demographics, enabling more young people to reach @ease more readily. Additionally, the @ease online chat is available throughout the country, and through the outreach initiative 'Everybody @ease' the peer counsellors visit neighbourhoods to reach young people where they reside.

Psychological distress and functioning in young people alleviated when visiting @ease, yet distress did not become absent overall. This could relate to the short time intervals between few visits and very high initial levels. Around half of the visitors had

their last visit within 6 weeks of their first. However, during this brief time interval, 43.2% improved (e.g. from 'severe' to 'moderate to severe', or 'moderate' to 'mild'), and significant improvements were found over the first visits. Still, implications must be explored cautiously given the lack of control groups, which future studies will address. Yet, the high levels of satisfaction and improvements over time when visiting @ease provide an indication for practitioners and loved ones of young people who are struggling, to inform them about the possibility of visiting @ease. Additionally, @ease could contribute to a reduced burden currently placed on GPs and other services. For some young people, peer support might be sufficient, and for others, @ease helps accessing clinical care while already alleviating part of the acute distress. Given that the majority did not receive prior care but satisfaction with @ease counselling was rated 4.5/5, @ease might additionally form a positive experience for those who experienced taboo or anxiety around opening up. In line with this, it has previously been found that earlier positive experiences with help-seeking and care providers facilitate future help-seeking.^{9,30}

Strengths and limitations

No control group has been incorporated yet, as was the case in outcome evaluations by headspace Australia^{20,21} and Jigsaw Ireland.¹⁹ However, one study compared care at Orygen and headspace Australia for young people with a borderline personality disorder, and found that headspace Australia's 'youth mental health service model' combined with 'befriending' showed equal effectiveness as cognitive analytic therapy and other care at Orygen.³¹ At @ease, comparison studies are being set up, taking into account the unique walk-in setting and low number of total visits naturally originating from this design. In the present study, results cannot with certainty be attributed solely to @ease peer counselling; although trends look encouraging, we must acknowledge the potential effects of factors such as bias and regression to the mean when interpreting. Notably, the distribution among return visitors included more males and older young people than one-time visitors. However, that males seek help repeatedly at @ease might also be considered a strength, as males generally seek care less often than females.³²










Because of the walk-in basis, young people speak to different counsellors at every visit. Although there is no therapeutic relationship over time because of this, the in-session relationship is strengthened by the provision of peer support. As emphasised by van Amelsvoort and Leijdesdorff, peer support and trained youth volunteers are of great importance in removing barriers to care and helping young people open up and feel heard, not to just solve financial or staff shortage concerns, but as an early accessible intervention in itself.³³ In addition to being around the same age and having received trainings, numerous peer counsellors have lived experiences, a key feature in peer support,³⁴ allowing to personally and authentically relate to the young person's problems.

Mixed-effects linear regression is tailored to longitudinal studies and thus relatedness in the data, as well as handling missing values and allowing different numbers of total visits. More data will be available over more visits, and future research can include more elaborate models. This includes more data-gathering of peer-rated questions and especially suicidality, given that death by suicide is a major cause of mortality among young people,³⁵ in which @ease might contribute to prevention. Furthermore, the number of confounders added in the model were limited to not overestimate effects, and will be examined with a larger sample size in the future.

Finally, although knowledge about mental well-being and monitoring outcomes is important, the prospect of filling out questionnaires should not add a barrier to visit. Upon co-designing the

processes, young people indicated preferences for a brief questionnaire administered after having been listened to. Furthermore, presenting problems highly varied in this group, necessitating multidimensional non-clinical assessments, which are largely lacking for young people aged 12–25 years.³⁶ Other studies have used the CORE-10 from age 16 or 18 years, and the YP-CORE (Young Person's CORE) for ages up to 16 or 18 years, analysing outcomes separately at the transition age division. The YP-CORE's phrasing was selected for the younger ages, and age- and gender-specific CSIs and RCIs have been established for ages 11–16 years.²⁶ @ease did not split up age groups into separate measures. To the best of our knowledge, @ease visitors had no difficulties understanding and identifying with the CORE-10 questions, but it is unknown whether outcomes would have differed with the YP-CORE. Explored differences were very small: two return @ease visitors aged up to 16 years would have had a different outcome with the adjusted CSI, and none did for the adjusted RCI.

Given the scarcity of outcome measures spanning the detrimental transition period, headspace Australia has developed and tested the 'MyLifeTracker', a concise multidimensional measure designed for young people aged 12–25 years,^{37,38} which is expected to be used in future @ease evaluations. In the present evaluation, the questionnaires cannot cover all relevant areas for every individual; however, they are concise and span a wide range of domains, including anxiety, support, sleep, coping and one's functioning in relationships, school and/or work, and they offer comparability among accessible youth initiatives. Moreover, the concerning levels scored on these measures indicate that these areas are of relevance in the burden experienced by these young people.

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Data availability

The data that support the findings of this study are available from the corresponding author, A.B., upon reasonable request.

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Author contributions

T.A.M.J.v.A., R.M.C.K., S.M.J.L. and A.P. established @ease, the questionnaire that is used at @ease, the ethical application and the study plan. All authors (T.A.M.J.v.A., R.M.C.K., A.P., N.H.G.v.M., R.F.P.d.W., N.B., S.M.J.L. and A.B.) ensured data-gathering at the @ease locations. A.B. processed and analysed the main part of the anonymised data and wrote the first draft, under supervision and elaborative feedback from T.A.M.J.v.A. and S.M.J.L. Finally, all authors (T.A.M.J.v.A., R.M.C.K., A.P., N.H.G.v.M., R.F.P.d.W., N.B., S.M.J.L. and A.B.) provided thorough feedback that constructed the final version of the paper.

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Declaration of interest

The authors were involved in the @ease foundation as professionals and/or members of the advisory board. There are no other interests to declare.

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