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# Findings from the Kooth evaluation

London School of Economics and Political Science

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CPEC Report

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The authors are grateful to all participants in the evaluation.

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# ACRONYMS USED IN THE DOCUMENT

| | |
|---|---|
| A&E | Accident and Emergency |
| CAMHS | Child and Adolescent Mental Health Services |
| DE | Did Enter: chats with counsellor/wellbeing practitioner which lasted at least six minutes |
| DNE | Did Not Enter: chat was less than six minutes |
| FU-BL | Follow-up-Baseline |
| GCSE | General Certificate of Education |
| GP | General Practitioner |
| KIDSCREEN-10 | Measure of health-related quality of life |
| LCA | Latent Class Analysis |
| P2P | Peer-to-peer measure: Kooth's measure of user's satisfaction with content |
| PAS | Pandemic Anxiety Scale; worries related to the Covid-19 pandemic |
| SD | Standard Deviation |
| SIDAS | Measure of suicidal ideation |
| SU | Kooth service user |
| YPCORE | Measure of psychological distress |

# EXECUTIVE SUMMARY

Kooth provides children and young people free access to a moderated and safeguarded online community of peers and a team of experienced counsellors and emotional wellbeing practitioners. It was launched in 2004 and currently more than 1,500 children and young people login to Kooth every day. Following an award from the Small Business Research Initiative in 2018 to develop the community offer on Kooth, a team at the Care Policy and Evaluation Centre, London School of Economics and Political Science was commissioned to explore the benefits of the enhanced Kooth platform.

## HOW PARTICIPANTS USED AND INTERACTED WITH KOOTH

- Statistical analysis (i.e., latent class analysis) based on Kooth users identified three distinct types of Kooth users:

  (i) represented 199 users (72.5%) who had a low frequency of use, on average logging in 5.6 times over a one-month period and who had 2.4 journal entries;

  (ii) represented 56 users (20.5%) with a medium frequency of use and had on average 13.6 logins and an average chat duration (excluding those classified as not entering the chat [DNEs]) of 54.8 minutes and

  (iii) represented 20 high-intensity users (7%), characterised by an average of 40.6 logins and an average chat duration of 185.2 minutes.
- The most utilised areas of Kooth were: "Reading articles" (55%) and the "Journal 'how do you feel today'" (53%). The least used areas were "Live forum discussion" and "Writing articles" (about 10%).
- The most used mini-activity was "Create a 'good mood' playlist" (29%), whilst the least common was "Create your own superhero" (2%).
- About half of survey respondents said they had offered help to others on Kooth. Evidence from interviews suggested that this proportion may be even higher, as respondents did not necessarily see themselves as offering support when they comment on others' posts, but such comments were often received as supportive. Users also reported a sense of fulfilment when offering advice or their own experiences on Kooth.
- Kooth interviewees and survey respondents reported finding experiences and advice of other young people experiencing mental health concerns very valuable. They described the ways in which this differed from advice from professionals. While professional advice was also valued, the experiences of peers were described as relatable, and good for learning from; peers were described as having a variety of approaches to addressing difficulties, which users could then experiment with in their own lives. These shared experiences were highly valued, as was the anonymity of the forum in which they were shared.
- By far the most common type of comment about forums, known on Kooth as 'discussion boards' was that it was beneficial to know that other people had similar problems 'it wasn't just me', or to hear from other people with similar problems. Some of these also mentioned that this made them feel less lonely 'I feel

less alone reading about other people's struggles'. Six specifically used the word 'relatable' mentioned in these comments either that the discussions were relatable, or that the discussions made them feel more relatable themselves. Interviewees similarly described how reading about similar experiences of other young people was very reassuring.

- Interviews gave further insights into the ways Kooth users could benefit, even if they were only reading other people's contributions. Kooth users go on to the platform as a strategy to help themselves when they are feeling upset or anxious, and as a distraction from their worries. They experience learning and solidarity from their interactions on Kooth. Kooth users also pass on benefits of learning from peers on Kooth to peers outside Kooth.
- Kooth users develop strategies to help themselves outside Kooth, such as techniques for self-calming, self-image, being positive or improving their mood. They develop these techniques building on advice and experiences of peers on Kooth, as recounted in discussions and articles, and from using Kooth's mini-activities.
- There was a feeling evidenced in both surveys and interviews that simply knowing Kooth is there could be reassuring for young people, even when they do not use it.
- Kooth helped people develop confidence: Comments in the survey were backed up by interview findings, that people found that the experiencing of 'meeting' people with similar problems and interacting with people on Kooth, made them feel more confident and more able to deal with relationships outside Kooth.
- In terms of support received by Kooth, the vast majority of users reported that if they needed support in the future, they were likely to use Kooth ("very true" = 44.6%, "somewhat true" = 43.2%), and that with Kooth they felt they were within a supportive community ("very true"=41.5%, "Somewhat true"=47%).

## EFFECT OF KOOTH ON PARTICIPANTS AND REPORTED CHANGES IN MENTAL HEALTH-RELATED OUTCOMES

- Based on a t-test, seven of the eleven outcome measures showed statistically significant improvements between baseline and follow-up. These were Psychological Distress (YP-CORE), Suicidal Ideation (SIDAS), hope, self-harm, arguing with parents, loneliness and self-esteem.
- There were self-reported improvements at one month follow-up for 43.8% while only 20% felt worse
- Analysis of different types of Kooth users suggest that low, medium and high intensity users could all benefit from the programme.
- Amongst respondents using the community space only (n=133), statistically significant improvements were found across three outcomes: YP-CORE, SIDAS and Hope. Kooth users in this group had somewhat lower levels of difficulties on most variables at baseline compared with other types of Kooth users. They also experienced, on average, a larger reduction in suicidality compared to other Kooth.
- Looking at the correlation between mean Peer-to-peer score (P2P) (Kooth's rating of satisfaction with peer-produced content) and the LSE evaluation outcome measures at follow-up, we found that most of the correlations were not significant at the 5% level, with the exception of "Self-esteem", which showed a positive (0.244) correlation with the P2P measure. This suggests that those with higher ratings of Kooth discussions or articles were also reported higher self-esteem at follow-up. Furthermore, there was a negative correlation between P2P ratings and self-harm, suggesting that those with higher P2P ratings were also those less likely to report self-harm at one month follow-up.
- The before and after comparison showed improvements in relationships with parents. Interviews suggested that Kooth discussions helped users to broach the subject of their mental wellbeing with parents and reduce some of the associated concerns. We also found that some users whose Kooth use was initially secret from parents, later shared with them.

## KOOTH IN RELATION TO HELP-SEEKING FROM TYPES OF HEALTH SERVICES

- More than half respondents felt they needed more services, a proportion which significantly reduced at follow-up but remained high at 37.8%. Amongst outpatient services, an appointment to see a GP, Doctor, Nurse or Psychologist, was the most desired, closely followed by school-based services.
- The services most often used by Kooth user survey respondents were: Psychiatrists, Psychologists, Counselling services, and GPs/Paediatricians. Interestingly, respondents reported a significant increase in service use at follow-up for the following services: CAMHS, youth or adult crisis helpline and psychologist/psychiatrist/counsellor. Their reported unmet needs, however, decreased. It may be that Kooth provided an important entry way to help-seeking and that Kooth users felt more comfortable seeking other sources of help after their experience of using Kooth.
- Interviews shed additional light on the increase in use of some services (mental health support) with the suggestion that experiences on Kooth may encourage users to make appropriate use of available support. Reading about others' experiences was described as a useful first step to accessing support, including understanding the language and vocabulary of service use, and learning how to put feelings into words.

## POTENTIAL ECONOMIC CASE AND VALUE FOR MONEY

- From an economic perspective, the Kooth intervention can be considered good "value for money" when used to target those outcomes that were found to be significant (YP-CORE, SIDAS, HOPE). This finding is also supported when comparing Kooth with similar interventions aimed at improving mental health in children and adolescents.

## PARTICIPANT FEEDBACK ABOUT HOW KOOTH COULD BE IMPROVED

- There were frustrations about the waiting times for counsellors and the time taken to moderate and publish posts. However, the quality of moderation may be what contributes to users' perceptions of Kooth as a kind and non-judgemental place.
- There are a large number of discussions in the Kooth forum and many end up not being responded to. This can be disappointing (at least) for the person beginning the discussion. A suggestion was to reconfigure the posting experience so that posters talking about a subject that had been raised previously could be directed to add their experience/comment to an existing discussion on the topic, rather than starting a new one.
- Kooth users reported being unable to find their previous posts, and that the flagging mechanism could not be used for this at the point of posting. They were unable to tell in some cases whether or not their post had past moderation. These issues could be addressed through a 'find my posts' facility, and through notification when posts do not pass moderation, ideally with the reasons.

# 1 INTRODUCTION

For more than 17 years, Kooth Plc has been working to improve the lives of children, young people and adults by connecting them with clinicians and each other in safe, supportive online communities. Kooth Plc see themselves as pioneers in digital mental health support, trusted by the NHS and over 250,000 people who have used or are using its services. Its flagship platform, Kooth.com is intended to give children and young people easy access to an online community of peers and a team of experienced counsellors. Access is free and addresses some typical barriers to support: there are no waiting lists, no thresholds, no user costs and complete anonymity at point of entry (a young person may choose to identify themselves, this usually occurs when they are at risk of harm and need additional support from other services). Launched in 2004 and accredited by the British Association for Counselling and Psychotherapy (BACP), more than 1,500 children and young people across the country now login to Kooth every day.

Kooth includes pre-moderated forums where users offer each other support within the forum. Kooth users also have the ability to create and submit articles, which are also pre-moderated and managed for risk. Around 10% of the Clinical Commissioning Groups (CCGs) funding for the service is directed at moderation and curation of content for forums and research is needed to assess the potential economic benefit of this part of the platform. Commissioners can then be informed about the potential benefits of adding to their investment in Kooth to support the peer support component.

A qualitative study of Kooth forum-users' experiences found that Kooth forums did not replace the role of a counsellor but did provide a valuable place for young people to gain additional, lower-level support (Prescott, Hanley, & Ujhelyi Gomez, 2019). The forums were experienced as supportive environments where helpful advice was shared, making participants feel less alone and more connected to others. Participants had some concerns including around technical issues. Following this research, Kooth have developed their peer support further through introducing a new activities function which encourages users to engage in wellbeing related activities and support one-another through moderated discussions. A team at CPEC was commissioned to explore the benefits of the enhanced Kooth platform.

The main aim of this research is to explore the potential benefits, and explore the economic case, for peer support in Kooth. Our objective is to analyse whether participants obtain better outcomes over time, after having accessed Kooth, whether they attribute changes in part to use of Kooth, and at what cost.

## 1.1 RESEARCH QUESTIONS

1. Do users with access to enhanced Kooth experience an improvement in their well-being and mental health over a one-month period?
2. What are the perceived benefits of the peer support component of Kooth?
3. How do users make use of the peer support component of Kooth?
4. Do different typologies of Kooth users exist? Do they experience different benefits?
5. What are the economic implications for commissioners of making the Kooth discussion boards available to young people in their area?

Ethical approval for the study was provided by the London School of Economics and Political Science Research Ethics Committee.

# 2 METHODS

We addressed the research questions using the following methods:

- Pre-post Kooth comparison surveys:

  **Online baseline surveys** to assess the mental health, wellbeing and service use of participating Kooth users before using Kooth for the first time.

  **Online follow-up surveys** one month later to repeat baseline assessments and to seek participants' views about components of the platform, and what, if anything, has been useful when using the platform over the last month.

**Qualitative interviews** with a small sub-sample of participating Kooth users.

**Analysis** of users' online interaction with Kooth.

**Cost analysis:** costing of the intervention and consideration of likely areas of cost and cost saving for commissioners.

## 2.1 PRE-POST KOOTH COMPARISON SURVEYS

New Kooth users were invited to take part in the evaluation (become a participant) at the point when they access the platform. Participants were invited to be part of the study when they registered for Kooth and were directed to take the baseline survey at that point. They first were shown an information sheet and were asked to give consent. Procedures were in place to seek parental consent for participants aged under 16 years. Kooth does not collect contact data from members. For the study, participants gave their email address to the LSE research team so that they could be contacted one month after completing the baseline survey and invited to complete the follow-up survey. These 'before' and 'after' surveys sought to measure changes in wellbeing during the period of exposure to Kooth and to seek participants' views about components of the platform and what, if anything, had been useful. This included assessment of awareness and views of the peer support/community components.

## 2.2 RECRUITMENT

During the study period, new users were coming to Kooth from all over England, mostly being signposted to the site via their schools. In 2020 an average of 9,500 new registrations occurred in July, August and September. Recruitment took place between mid-September and mid-December 2020. The study took place during the Covid-19 coronavirus pandemic. While schools had been shut to most pupils earlier in the pandemic, schools were open during the study period, although many pupils accessed teaching from home during short periods of self-isolation, if they had symptoms of the virus or had been in contact with someone who had tested positive for the virus. An invitation for new Kooth users to take part in the research was placed on the site's 'home feed'. Potential participants were first asked whether they were new to Kooth; if they answered no they were given an apology, that the survey was for new Kooth users, and linked back to the Kooth home page'. Those interested in taking part clicked on a link which took them to the LSE survey page, outside Kooth, and not accessible by Kooth staff, in a separate screen. Here the study was explained and consent to participate requested. Participants were asked to give their Kooth usernames, so we could link to Kooth-collected data, however this was not a condition for participation. It was explained to participants that all data

would be pseudonymised and only available to researchers on the project.

Participants were offered an incentive to participate in both pre and post surveys. Participants were sent a £10 Amazon voucher as a thank you for participating in both surveys. In the follow-up survey, participants were asked whether they would be interested in taking part in a telephone interview, and if so, to provide a phone number.

This research report presents findings from the analysis of the Kooth evaluation data, drawing on the LSE survey results, linked data routinely collected by Kooth from participants' use of the site, and data from qualitative interviews with 9 Kooth users. 630 young people responded to the baseline survey, and of these, 302 participants also responded to the follow-up survey. Routinely collected Kooth data could be linked in 258 cases via matching usernames.

## 2.3 OUTCOME MEASURES

The following measures were used to assess aspects of young people's mental health and wellbeing at baseline and at follow-up.

### PSYCHOLOGICAL DISTRESS

YP-CORE Young Person's Clinical Outcomes in Routine Evaluation (Twigg et al., 2010 and Twigg et al., 2016). The YP-CORE measures psychological distress and is a self-report measure including ten items describing feelings of low mood and anxiety. The YP-CORE was only available at baseline for those participants for whom we were able to link Kooth data. This is because YP-CORE is routinely collected for all new registrants on Kooth on a voluntary basis, though with around an 80% completion rate. All other measures were collected via the LSE surveys.

### COVID-RELATED ANXIETY

Pandemic Anxiety Scale (PAS, McElroy et al., 2020) a specific anxiety measure of the impact of COVID-19.

### SELF-HARM

Self-harm will be assessed using a2-item questionnaire (Moran et al., 2012). This asks: 'In the past month have you ever deliberately hurt yourself or done anything that might have harmed you or even killed you?' with a yes/no answer, followed by an open response question about what they did.

### SUICIDAL IDEATION

Suicidal Ideation is measured with the five-item Suicidal Ideation Attributes Scale (SIDAS, van Spijker et al., 2014).

### PERCEIVED IMPACT OF DIFFICULTIES

The Strengths and Difficulties Questionnaire (SDQ) Impact questions measure the impact of perceived difficulties on the respondent's life for respondents who state that they have difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people (SDQ, Goodman 2001).

### QUALITY OF LIFE

The KIDSCREEN-10 (Ravens-Sieberer and the European KIDSCREEN Group, 2010) is a health-related quality of life measure for children and adolescents.

### SELF-ESTEEM

Self-esteem was measured with a single-item measure where participants answer a single item on a 5-point Likert scale, ranging from 1 (not very true of me) to 5 (very true of me). Though shortened, the scale has strong convergent validity with the Rosenberg Self-Esteem Scale (Rosenberg, 1965) and had similar predictive validity as the Rosenberg Self-Esteem Scale (Robins, Hendin, and Trzesniewski, 2001).

### LONELINESS

Loneliness was assessed with a single-item national indicator of loneliness (Office for National Statistics, 2018).

### HOPE

The Children's Hope Scale (Snyder et al. (1997) uses six items to measure respondents' perceptions that their hopes can be met.

### RELATIONSHIP WITH PARENTS

This was assessed with two questions:

- Most young people have occasional arguments with their parents. How often do you argue with your parent(s)? (5 point answer).

This is reported in the variable Arguing with parents

- Overall, how close would you say you are to your parent(s)? (4 point answer)

This is reported in the variable Close to parents

SERVICE USE

Questions on participants' use of services were adapted from the Service Assessment for Children and Adolescents (Stiffman, et al., 2000) to record use of services at baseline and at the one-month follow-up, covering a retrospective one-month period. Participants were asked to provide the number of contacts that they had with community care professionals, hospital services and school services.

## 2.4 ANALYSIS

We performed a variety of analyses to describe and interpret the data. We used descriptive statistics to understand the nature of the users, focussing on the core sample of those who were present both at baseline and at follow-up. We also compared this sample with those who were present only at baseline. We used t-tests to ascertain whether those who completed a baseline survey only were different from those who completed baseline and follow-up surveys according to the main socio-demographic characteristics (i.e., gender, age, ethnicity, socio-economic status, and education or working situations). We implemented a Latent Class Analysis (LCA) to help us categorise users based on their usage of Kooth. These categories were used to explore whether outcomes were associated with a particular pattern of Kooth use. Cost analyses were added, on the basis of the available data.

# 3 RESULTS

630 young people responded to the baseline survey, and of these, 302 participants also responded to the follow-up survey. Routinely collected Kooth data could be linked in 258 cases based on matching usernames in the survey database with the database of routinely collected data. The analyses included in this results section focus on the sample of 302 users who responded to both surveys. However, in order to provide some context about how users who filled out the baseline and follow-up surveys may differ compared to those who completed the baseline survey only, we also present a comparison of the individuals who were present only at baseline versus those who were present both at baseline and follow-up in Table 1.

## 3.1 COMPARING THOSE WHO DID AND DID NOT RESPOND TO THE FOLLOW-UP SURVEY

The purpose of this comparison was to shed light on whether the individuals who were present at both baseline and follow-up were significantly different from the "baseline-only" sample. Using a t-test based on the 95% significance level, we observed that participants differed on four key characteristics: SDQ impact (with a p-value below 1%), self-esteem, KIDSCREEN-10, HOPE (the three latter outcomes with a p-value below 5%). These comparisons suggest that the sample used in our main analyses (I.e., those who responded to the baseline and follow up surveys) reported, on average: lower self-esteem, higher impacts of mental health difficulties on their daily lives, somewhat higher health-related quality of life and levels of hope. This suggests that our sample for analysis may have been more impacted by mental health problems compared to the average young person registering to use Kooth.

TABLE 1: COMPARISON BETWEEN USERS PRESENT AT BASELINE ONLY VS. THOSE ALSO PRESENT AT FOLLOW-UP

| Baseline variables | Baseline-only (n=328) | | With follow-up (n=302) | | Difference | p-value 95% |
|---|---|---|---|---|---|---|
| | n | %/mean | n | %/mean | FU-BL | |
| **SOCIODEMOGRAPHIC CHARACTERISTICS** | | | | | | |
| Gender (Female) | 262 | 78.2% | 301 | 79.1% | 0.8% | 0.812 |
| Gender (Male) | 262 | 14.5% | 301 | 12.6% | -1.9% | 0.518 |
| Gender (Gender-fluid, Agender, Other) | 262 | 7.3% | 301 | 8.3% | 1.1% | 0.641 |
| Age | 268 | 16.53 | 301 | 16.71 | 0.18 | 0.244 |
| Ethnicity (White) | 267 | 80.5% | 297 | 82.5% | 2.0% | 0.550 |
| Ethnicity (Asian) | 267 | 6.7% | 297 | 7.1% | 0.3% | 0.878 |
| Ethnicity (Mixed) | 267 | 8.6% | 297 | 6.4% | -2.2% | 0.321 |
| Ethnicity (Black) | 267 | 2.2% | 297 | 4.0% | 1.8% | 0.220 |
| Ethnicity (Other ethnicities) | 267 | 1.9% | 297 | 0.0% | -1.9% | 0.025 |
| Self-perceived socioeconomic status (<=2) | 312 | 21.2% | 301 | 21.9% | 0.8% | 0.816 |
| Working (part-time or full-time) | 315 | 8.6% | 302 | 10.3% | 1.7% | 0.473 |
| Neither working nor studying | 315 | 2.5% | 302 | 2.6% | 0.1% | 0.932 |
| Year group (if at school) | 208 | 10.3 | 195 | 10.7 | 0.3 | 0.015 |
| Highest Educational level (at least 5 GCSE)* | 140 | 80.0% | 172 | 81.4% | 1.4% | 0.757 |
| School type (State funded) | 312 | 90.1% | 301 | 89.4% | -0.7% | 0.777 |
| **OUTCOME MEASURES** | | | | | | |
| Pandemic anxiety scale (higher score = greater Covid-19 anxiety) | 317 | 6.31 | 302 | 6.82 | 0.51 | 0.076 |
| Impact of mental health difficulties on life (higher score indicates greater impact) | 317 | 13.83 | 302 | 15.74 | 1.90 | 0.000 |
| Suicidal ideation (higher score = greater impact) | 317 | 15.08 | 302 | 16.54 | 1.46 | 0.197 |
| Health-related quality of life (KIDSCREEN-10) (higher score = greater health-related quality of life) | 317 | 2.23 | 302 | 2.54 | 0.31 | 0.030 |
| HOPE (higher score = greater hope) | 317 | 8.92 | 302 | 9.93 | 1.01 | 0.033 |
| Self-harm (% agree) (higher score = more likelihood of self-harm) | 291 | 0.42 | 297 | 0.47 | 0.05 | 0.205 |
| Arguing with parents (higher score = less arguing) | 294 | 2.63 | 299 | 2.62 | -0.01 | 0.940 |
| Close to parents (higher score = more closeness with parents) | 294 | 2.25 | 299 | 2.27 | 0.02 | 0.770 |
| Loneliness (higher score = less lonely) | 294 | 1.59 | 300 | 1.62 | 0.03 | 0.670 |
| Self-esteem (higher score = greater self-esteem) | 287 | 2.92 | 299 | 2.54 | -0.38 | 0.032 |

*Including only Kooth users who were at least 17 years old at baseline, or who were enrolled in year 12, year 13 or year 14 (n=173).

= Significant differences.

YP-CORE baseline scores were recorded from routinely collected Kooth data and not retrieved for those who did not complete follow-up and therefore are not included in this comparison.

### 3.2 SAMPLE DESCRIPTION

The remainder of the results concerns only the sample of 302 Kooth users who completed both pre and post study surveys. Table 2 describes how participants arrived at Kooth in the first place, suggesting that referrals through school and via teachers was the most common route; but, with significant numbers of users also having been recommended to Kooth by a GP or other healthcare professional. The next most common pathway to Kooth was through friends and family.

TABLE 2: HOW DID YOU HEAR ABOUT US?

| | n | % |
|---|---|---|
| School | 72 | 27.17 |
| GP | 38 | 14.34 |
| School or teacher | 37 | 13.96 |
| Other | 23 | 8.68 |
| CAMHS | 13 | 4.91 |
| Friend | 13 | 4.91 |
| Google | 12 | 4.53 |
| Parent | 11 | 4.15 |
| Academic staff | 9 | 3.4 |
| Family/Friends | 6 | 2.26 |
| Youth Service | 6 | 2.26 |
| Other Worker | 4 | 1.51 |
| Psychiatrist | 4 | 1.51 |
| Carer | 3 | 1.13 |
| Social Worker | 2 | 0.75 |
| Wellbeing Reps | 2 | 0.75 |
| A&E | 1 | 0.38 |
| College | 1 | 0.38 |
| Email | 1 | 0.38 |
| Helpline | 1 | 0.38 |
| Internet | 1 | 0.38 |
| Links | 1 | 0.38 |
| Parent or carer | 1 | 0.38 |
| Poster | 1 | 0.38 |
| University Website | 1 | 0.38 |
| Word of Mouth | 1 | 0.38 |
| Total responding to this question | 265 | |

TABLE 3: SAMPLE DESCRIPTION

| | Baseline (n=302) | | Follow–up (n=302) | | Difference | p–value 95% |
|---|---|---|---|---|---|---|
| | n | %/mean | n | %/mean | FU–BL | |
| Gender (Female) | 301 | 79.1% | – | – | – | – |
| Gender (Male) | 301 | 12.6% | – | – | – | – |
| Gender (Gender-fluid, Agender, Other) | 301 | 8.3% | – | – | – | – |
| Age | 301 | 16.71 | – | – | – | – |
| Ethnicity (White) | 297 | 82.5% | – | – | – | – |
| Ethnicity (Asian) | 297 | 7.1% | – | – | – | – |
| Ethnicity (Mixed) | 297 | 6.4% | – | – | – | – |
| Ethnicity (Black) | 297 | 4.0% | – | – | – | – |
| Year group (if at school) | 195 | 10.7 | – | – | – | – |
| Highest educational level (at least 5 GCSE)* | 172 | 81.4% | – | – | – | – |
| School type (State funded) | 301 | 89.4% | – | – | – | – |
| Self–perceived socioeconomic status (<=2) | 301 | 21.9% | 301 | 18.6% | -3.3% | 0.132 |
| Working (part-time or full-time) | 302 | 10.3% | 302 | 7.9% | -2.3% | 0.090 |
| Neither working nor studying | 302 | 2.6% | 302 | 3.0% | 0.3% | 0.706 |

Figure 1 presents the distribution of age at baseline (only including individuals who were present also at follow-up). Most of the sample were below 18 years old, although the mode of the distribution is 18. The range of ages among those who responded was 13 to 21 years.

FIGURE 1: AGE DISTRIBUTION OF KOOTH USER RESPONDENTS AT BASELINE

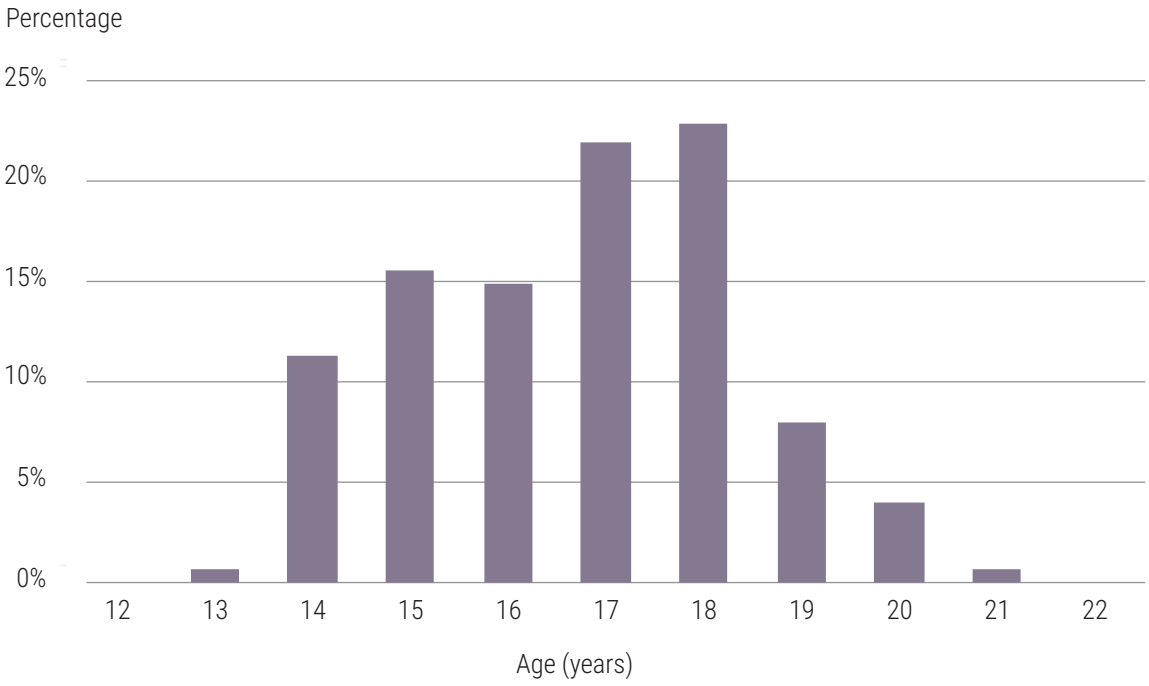
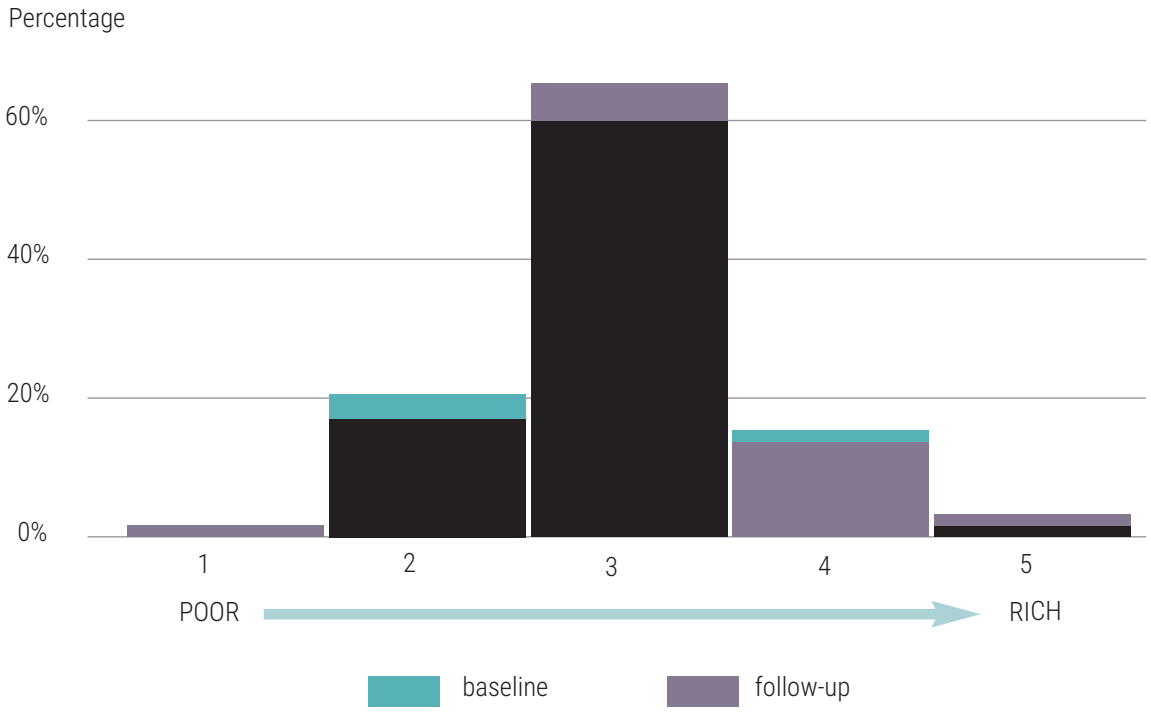


Figure 2 presents the distribution of self-perceived socioeconomic status at baseline and at follow-up. Respondents were shown an image of a ladder with five rungs and told the following: "this ladder represents how things are in the United Kingdom. At the top of the ladder are all the people who have the best jobs, lots of money, live in nice places, and go to the best schools. At the bottom of the ladder are those people who don't have enough money, don't live in a nice place, and might not have a job. Now think about your family—where would they be on the ladder?"

Respondents were instructed to indicate which rung best represents their family's position, with the lowest rung [1] representing "poor" and the highest rung [5] representing "rich." There were no significant differences in reported self-perceived socioeconomic status at baseline compared to follow-up.

FIGURE 2: SELF-PERCEIVED SOCIOECONOMIC STATUS



### 3.3 COMPARISON OF OUTCOME MEASURES BETWEEN BASELINE AND FOLLOW-UP

Table 4 compares the baseline and follow-up scores of key outcome measures (where available) for the individuals who completed the survey at both time points. If we use a criterion of the 95% confidence level, we can observe that seven of the outcome measures (highlighted in bold in Table 4A and Table 4B) showed statistically significant improvements between baseline and follow-up (based on a t-test). These are Psychological Distress (YP-CORE), Suicidal Ideation (SIDAS), and HOPE, self-harm, arguing with parents, loneliness and self-esteem. The other outcomes did not show any significant change.

TABLE 4A: COMPARISON BETWEEN BASELINE AND FOLLOW-UP MEASURES (KEY OUTCOMES)

| | | | Baseline (n=302) | Follow-up (n=302) | p-value 95% | Pos/Neg scale |
|---|---|---|---|---|---|---|
| | Label | n | mean | mean | | |
| PAS | Worried about C19 | 302 | 6.82 | 6.58 | 0.102 | Neg |
| SDQ impact | Strengths and difficulties impact | 302 | 15.74 | 15.39 | 0.132 | Neg |
| YP-CORE | Psychological distress | 258 | 27.84 | 24.83 | 0.000 | Neg |
| SIDAS | Suicidal ideation | 302 | 16.54 | 15.08 | 0.007 | Neg |
| KIDSCREEN-10 | Health-related quality of life | 302 | 2.54 | 2.60 | 0.453 | Pos |
| HOPE | Level of hope | 302 | 9.93 | 11.39 | 0.000 | Pos |

TABLE 4B: COMPARISON BETWEEN BASELINE AND FOLLOW-UP MEASURES (ADDITIONAL OUTCOMES)

| | | | Baseline (n=302) | Follow-up (n=302) | p-value 95% | Pos/Neg scale |
|---|---|---|---|---|---|---|
| | Label | n | mean | mean | | |
| Self-harm | User-reported self-harm | 295 | 0.47 | 0.38 | 0.001 | Neg |
| Arguing with parents | Fewer arguments with parents | 297 | 2.63 | 2.76 | 0.006 | Pos |
| Close to parents | Feeling close to parents | 298 | 2.27 | 2.22 | 0.180 | Pos |
| Loneliness | Feeling less lonely | 300 | 1.62 | 1.78 | 0.001 | Pos |
| Self-esteem | Higher self-esteem | 295 | 2.54 | 2.83 | 0.004 | Pos |

### 3.4 SELF-REPORTED USE OF KOOTH

As well as comparing measures between baseline and follow-up to consider distance travelled and improvements in various aspects of mental health, we also asked respondents, in the follow-up survey, about their own views and beliefs as to whether, and how, Kooth was helpful for them.

First, respondents were asked which parts of Kooth they had used. Table 5 reports which parts of Kooth survey respondents said they have used (multiple responses were allowed). The most used parts were "Reading articles" and the "Journal 'how do you feel today'". The least used parts were "Live forum discussion" and "Writing articles".

TABLE 5: WHICH OF THE FOLLOWING PARTS OF KOOTH HAVE YOU USED?

| Kooth tool | n | % |
|---|---|---|
| Reading articles | 166 | 55.0% |
| Journal 'how do you feel today' | 160 | 53.0% |
| Mini activities | 125 | 41.4% |
| Discussion boards | 120 | 39.7% |
| Messaging with a counsellor | 97 | 32.1% |
| Chat with a counsellor | 88 | 29.1% |
| Recording goals and progress | 87 | 28.8% |
| Linking to helpful resources | 53 | 17.5% |
| Commenting on articles | 50 | 16.6% |
| Writing articles | 31 | 10.3% |
| Live forum discussion | 30 | 9.9% |
| **Total responding to this question** | **302** | |

Table 6 shows which Kooth mini-activities respondents reported having tried. The most common was “Create a 'good mood' playlist”, whilst the least common was “Create your own superhero”.

TABLE 6: WHICH OF THE MINI-ACTIVITIES DID YOU TRY?

| Mini-activity | n | % |
|---|---|---|
| Create a 'good mood' playlist | 87 | 28.8% |
| Write a letter to your future self | 53 | 17.5% |
| Make your own coping box | 44 | 14.6% |
| Improve your bedtime routine | 44 | 14.6% |
| Learn how to do bubble breathing | 43 | 14.2% |
| Sing like nobody's listening | 43 | 14.2% |
| Write to express how you feel | 40 | 13.2% |
| Get your body moving | 34 | 11.3% |
| Personalise your space | 30 | 9.9% |
| Share advice with others | 29 | 9.6% |
| Explore the positive power of pets | 28 | 9.3% |
| Create a daily plan for yourself | 25 | 8.3% |
| Practice being present | 24 | 7.9% |
| Create your own activity jar | 14 | 4.6% |
| Draw a song | 13 | 4.3% |
| Take part in our Kooth word challenge | 11 | 3.6% |
| Create a recipe for coping | 10 | 3.3% |
| Create your own superhero | 6 | 2.0% |
| **Total responding to this question** | **265** | |

### 3.5 VIEWS ON THE HELPFULNESS OF KOOTH

Table 7 shows respondents' views about the helpfulness of the different tools available within Kooth. Respondents were only asked their views on aspects of Kooth which they said they had used. The mini-activities and discussion boards had the highest proportion of respondents saying that they were either "somewhat" or "very" helpful. "Links to helpful resources", "chatting with a counsellor", and "discussion boards" (38.3%) received the highest proportion of 'very helpful' ratings. However only 49 individuals responded to the question about the "links to helpful resources" tool. Only a small proportion of respondents (14% or less) reported that any of the tools were not helpful at all.

TABLE 7: HELPFULNESS OF THE KOOTH TOOLS

| Kooth tool | Not helpful at all | Somewhat helpful | Very helpful | Total |
|---|---|---|---|---|
| Mini activities | 3.2% | 73.4% | 23.4% | 100% |
| n | 4 | 91 | 29 | 124 |
| Discussion boards | 5.0% | 56.7% | 38.3% | 100% |
| n | 6 | 68 | 46 | 120 |
| Live forum discussions | 6.7% | 60.0% | 33.3% | 100% |
| n | 2 | 18 | 10 | 30 |
| Chat with a counsellor | 6.8% | 45.5% | 47.7% | 100% |
| n | 6 | 40 | 42 | 88 |
| Recording goals and progress | 14.0% | 65.1% | 20.9% | 100% |
| n | 12 | 56 | 18 | 86 |
| Journal 'how do you feel today' | 13.9% | 55.1% | 31.0% | 100% |
| n | 22 | 87 | 49 | 158 |
| Reading articles | 7.3% | 67.1% | 25.6% | 100% |
| n | 12 | 110 | 42 | 164 |
| Writing articles | 12.9% | 54.8% | 32.3% | 100% |
| n | 4 | 17 | 10 | 31 |
| Commenting on articles | 10.2% | 73.5% | 16.3% | 100% |
| n | 5 | 36 | 8 | 49 |
| Links to helpful resources | 7.8% | 43.1% | 49.0% | 100% |
| n | 4 | 22 | 25 | 51 |

Table 8 reports respondents' views about the support they received, or provided to others, within Kooth. The vast majority of users reported that if they needed support in the future, they were likely to use Kooth ("very true" = 44.6%, "somewhat true" = 43.2%), and that with Kooth they felt they were within a supportive community ("very true" = 41.5%, "Somewhat true" = 47%). Just over half the sample reported that it was either 'somewhat' or 'very' true that they provided support to others on Kooth. On all measures, the majority responded positively. Somewhat smaller majorities agreed that they had learnt ways to manage their emotions better (37% said this was not at all true) or had learnt strategies and skills for helping themselves when worried (32% said this was not at all true).

TABLE 8: SUPPORT RECEIVED, AND SUPPORT PROVIDED TO OTHERS, THROUGH KOOTH

| Statement | Not at all true | Somewhat true | Very true | Total |
|---|---|---|---|---|
| I have found support for my needs | 21.5% | 59.3% | 19.3% | 100% |
| n | 58 | 160 | 52 | 270 |
| If I need support in the future, I am likely to use Kooth | 12.2% | 43.2% | 44.6% | 100% |
| n | 33 | 117 | 121 | 271 |
| I have learnt ways to manage my emotions better | 37.0% | 48.5% | 14.4% | 100% |
| n | 100 | 131 | 39 | 270 |
| I have learnt strategies and skills for helping myself when I am worried about my mental health | 31.9% | 45.6% | 22.6% | 100% |
| n | 86 | 123 | 61 | 270 |
| With Kooth I feel I am part of a supportive community | 11.5% | 47.0% | 41.5% | 100% |
| n | 31 | 127 | 112 | 270 |
| As a result of Kooth, I am more likely to seek help for mental health issues | 22.7% | 43.5% | 33.8% | 100% |
| n | 61 | 117 | 91 | 269 |
| Because of Kooth, I am more confident about how to seek help for mental health | 27.5% | 48.3% | 24.2% | 100% |
| n | 74 | 130 | 65 | 269 |
| I have offered support to other people on Kooth | 48.9% | 25.9% | 25.2% | 100% |
| n | 132 | 70 | 68 | 270 |

Table 9 reports which form of support survey respondents said they offered to other users in Kooth. Most people reported they did not offer support to others, whilst over one-third of users offered support by commenting on a discussion.

Although a large minority of participants reported not offering support to others, evidence from the qualitative interviews suggests that users may not have considered that they were offering support to others, even though they commented on someone's post in ways that might be considered supportive.

Table 10 reports on whether and where respondents felt they had received helpful support from other young people in Kooth.

TABLE 9: DID YOU OFFER SUPPORT TO OTHER PEOPLE ON KOOTH IN ANY OF THE FOLLOWING WAYS?

| | n | % |
|---|---|---|
| I didn't offer support to others | 120 | 39.7% |
| Commenting on a discussion | 106 | 35.1% |
| Commenting on an article | 53 | 17.5% |
| Starting a discussion | 44 | 14.6% |
| Writing an article | 16 | 5.3% |
| Commenting on mini-activities | 11 | 3.6% |
| In another way (please specify) | 1 | 0.3% |

TABLE 10: DID YOU GET HELPFUL SUPPORT FROM OTHER KOOTH USERS IN:

| | n | % |
|---|---|---|
| Articles | 98 | 32.5% |
| Discussions | 97 | 32.1% |
| I didn't find other Kooth users' contributions helpful | 88 | 29.1% |
| Comments on mini-activities | 31 | 10.3% |
| Other (please specify) | 2 | 0.7% |
| **Total responding to this question** | **302** | |

At follow-up, respondents were asked about their own impression of changes in how they were feeling compared to baseline and the role of Kooth in relation to any change (Table 11). Almost half (44%) of the Kooth users reported feeling a bit better or much better compared to when they first joined Kooth.

TABLE 11: COMPARED TO WHEN YOU FIRST JOINED KOOTH ABOUT ONE MONTH AGO, HOW ARE YOU FEELING?

| | n | % |
|---|---|---|
| Much better | 22 | 7.5% |
| A bit better | 107 | 36.3% |
| About the same | 107 | 36.3% |
| A bit worse | 37 | 12.5% |
| Much worse | 22 | 7.5% |

We asked respondents about what factors they felt were responsible for the change in how they were feeling (Table 12). Although changes outside Kooth, such as schools reopening, were mentioned by the most people, 58 credited being part of the Kooth community with the changes they had experienced since baseline, while 48 attributed change to speaking with a professional on Kooth. Other evaluations of psychotherapy programmes have also found that external factors, outside of the therapeutic relationship and programme, can play a significant role in individual improvements.

TABLE 12: DO YOU THINK ANY CHANGE IS DUE TO THE FOLLOWING?

| | n | % |
|---|---|---|
| oing back to school after school closures | 75 | 24.8% |
| Don't know the reason | 74 | 24.5% |
| Other changes in my life (can you explain?)[2] | 64 | 21.2% |
| There has not been any change | 60 | 19.9% |
| Being part of the Kooth community[1] | 58 | 19.2% |
| Speaking to a professional on Kooth[1] | 48 | 15.9% |
| **Total responding to this question** | **302** | |

[1] 27.8% of participants attributed the change to some aspect of Kooth (i.e., being part of the Kooth community and / or speaking to a professional on Kooth).

[2] 58 respondents explained 'other changes' in an open-ended response; these related to their personal circumstances rather than Kooth.

### 3.6 SERVICES OUTSIDE KOOTH USED AND/OR DESIRED BY KOOTH EVALUATION PARTICIPANTS

At each timepoint respondents were asked about any services or supports they had received in the past month "for problems with your behaviour, feelings, or drugs or alcohol"

Table 13 summarises service use reported by Kooth users at baseline and follow-up. These figures suggest that the services most often used by respondents were: Psychiatrists, Psychologists, Counselling services, and GPs/Paediatricians. Interestingly, respondents reported a significant increase in service use at follow-up for the following services: CAMHS, youth or adult crisis helpline and psychologist/psychiatrist/counsellor. It may be that Kooth provided an important entry way to help-seeking and that Kooth users felt more comfortable seeking other sources of help after their experience of using Kooth. Alternatively, it could be that interacting with other Kooth users and online counsellors via Kooth led to recommendations to seek help. This corresponds with responses in Table 8 suggesting that 77% of participants felt it was somewhat or very true that they were 'more likely to seek help for mental health issues' and 73% more confident about how to seek help for mental health (See Table 8; also see theme from interviews on how Kooth might help people make better use of services). Importantly, there were no reported reductions in any type of service use.

TABLE 13: SERVICE USE

| Variable | Baseline (n=302) % | Follow-up (n=302) % | Difference 95% FU-BL | p-value 95% |
|---|---|---|---|---|
| Psychologist, Psychiatrist or Counsellor | 20.2% | 29.8% | 9.6% | 0.001 |
| Other counselling/therapy in school | 16.6% | 20.2% | 3.6% | 0.109 |
| Youth or adult crisis helpline | 12.3% | 18.5% | 6.3% | 0.012 |
| Mental health clinic (e.g. CAMHS) | 10.9% | 16.9% | 6.0% | 0.003 |
| GP | 16.9% | 14.6% | -2.3% | 0.355 |
| Self-help group meetings | 4.0% | 5.0% | 1.0% | 0.514 |
| Special school | 2.6% | 4.3% | 1.7% | 0.252 |
| Special help | 3.3% | 3.6% | 0.3% | 0.809 |
| A&E | 1.3% | 2.0% | 0.7% | 0.480 |
| Social worker | 3.0% | 2.0% | -1.0% | 0.367 |
| Classroom or inclusion centre | 1.7% | 2.0% | 0.3% | 0.706 |
| Hospital | 1.7% | 1.0% | -0.7% | 0.415 |
| Drug and alcohol clinic | 0.3% | 0.7% | 0.3% | 0.318 |
| Foster home | 0.0% | 0.0% | 0.0% | - |
| Group home | 0.0% | 0.0% | 0.0% | - |
| A website or app, other than the Kooth programme | 23.5% | 25.2% | 1.7% | 0.570 |

More information about the type of contact, intervention and/or treatment received at each service is shown in Table 14.

TABLE 14: SERVICE USE (EXTENDED)

| Variable | | Baseline (n=302) % | Follow-up (n=302) % | Difference FU-BL | p-value 95% |
|---|---|---|---|---|---|
| Mental health clinic | Received therapy or counselling | 7.0% | 9.6% | 2.6% | 0.131 |
| | Had a contact person who coordinated services | 6.0% | 8.6% | 2.6% | 0.088 |
| | Received medications for emotional, behavioural, or drug or alcohol problems | 1.0% | 2.0% | 1.0% | 0.180 |
| | Had any evaluation or testing | 4.3% | 7.6% | 3.3% | 0.050 |
| Psychlogical services | Received therapy or counselling | 8.6% | 11.9% | 3.3% | 0.086 |
| | Had a contact person who coordinated services | 4.3% | 7.3% | 3.0% | 0.083 |
| | Received medications for emotional, behavioural, or drug or alcohol problems | 1.0% | 3.3% | 2.3% | 0.008 |
| | Had any evaluation or testing | 3.0% | 5.3% | 2.3% | 0.127 |
| Drug and alcohol clinic | Received therapy or counselling | 0.0% | 0.3% | 0.3% | 0.318 |
| | Had a contact person who coordinated services | 0.0% | 0.3% | 0.3% | 0.318 |
| | Received medications for emotional, behavioural, or drug or alcohol problems | 0.0% | 0.0% | 0.0% | – |
| | Had any evaluation or testing | 0.3% | 0.0% | -0.3% | 0.318 |
| A&E | Received therapy or counselling | 0.0% | 0.3% | 0.3% | 0.318 |
| | Had a contact person who coordinated services | 0.0% | 0.3% | 0.3% | 0.318 |
| | Received medications for emotional, behavioural, or drug or alcohol problems | 0.0% | 0.7% | 0.7% | 0.158 |
| | Had any evaluation or testing | 0.7% | 1.0% | 0.3% | 0.656 |
| GP | Received therapy or counselling | 3.6% | 2.0% | -1.7% | 0.197 |
| | Had a contact person who coordinated services | 5.3% | 5.6% | 0.3% | 0.848 |
| | Received medications for emotional, behavioural, or drug or alcohol problems | 3.6% | 3.6% | 0.0% | 1.000 |
| | Had any evaluation or testing | 3.3% | 5.3% | 2.0% | 0.201 |
| Acupuncturist /chiropractor | Received therapy or counselling | 0.0% | 0.0% | 0.0% | – |
| | Had a contact person who coordinated services | 0.0% | 0.0% | 0.0% | – |
| | Received medications for emotional, behavioural, or drug or alcohol problems | 0.0% | 0.0% | 0.0% | – |
| | Had any evaluation or testing | 0.3% | 0.0% | -0.3% | 0.318 |

TABLE 14: SERVICE USE (EXTENDED)

| Variable | | Baseline (n=302) % | Follow-up (n=302) % | Difference FU-BL | p-value 95% |
|---|---|---|---|---|---|
| Helpline/ hotline | Received therapy or counselling | 5.0% | 9.9% | 5.0% | 0.005 |
| | Had a contact person who coordinated services | 2.0% | 5.3% | 3.3% | 0.025 |
| | Received medications for emotional, behavioural, or drug or alcohol problems | 0.7% | 0.0% | -0.7% | 0.158 |
| | Had any evaluation or testing | 0.7% | 2.3% | 1.7% | 0.096 |
| Group Meetings | Received therapy or counselling | 1.7% | 2.3% | 0.7% | 0.528 |
| | Had a contact person who coordinated services | 1.7% | 1.3% | -0.3% | 0.706 |
| | Received medications for emotional, behavioural, or drug or alcohol problems | 0.0% | 0.0% | 0.0% | – |
| | Had any evaluation or testing | 0.7% | 0.7% | 0.0% | 1.000 |
| Special school | Had a contact person who coordinated services | 0.0% | 2.0% | 2.0% | 0.014 |
| | Had any evaluation or testing | 0.0% | 0.3% | 0.3% | 0.318 |
| | Family had counselling | 0.0% | 0.3% | 0.3% | 0.318 |
| | User had counselling | 0.0% | 0.7% | 0.7% | 0.158 |
| Classroom or Inclusion Centre | Had a contact person who coordinated services | 1.0% | 0.7% | -0.3% | 0.565 |
| | Had any evaluation or testing | 0.3% | 0.0% | -0.3% | 0.318 |
| | Family had counselling | 0.7% | 0.0% | -0.7% | 0.158 |
| | User had counselling | 0.0% | 0.3% | 0.3% | 0.318 |
| Special help in the regular classroom | Had a contact person who coordinated services | 1.0% | 0.7% | -0.3% | 0.656 |
| | Had any evaluation or testing | 0.0% | 1.0% | 1.0% | 0.083 |
| | Family had counselling | 0.0% | 0.3% | 0.3% | 0.318 |
| | User had counselling | 1.0% | 1.0% | 0.0% | 1.000 |
| School counsel/ therapy | Had a contact person who coordinated services | 7.0% | 9.6% | 2.6% | 0.183 |
| | Had any evaluation or testing | 0.7% | 1.3% | 0.7% | 0.415 |
| | Family had counselling | 1.3% | 1.3% | 0.0% | 1.000 |
| | User had counselling | 1.7% | 3.0% | 1.3% | 0.206 |

Table 15 presents the average number of contacts or interactions with services, for those who used each service.

After being asked about use of services, respondents were then asked: Were there any other services that you thought you needed? (Table 16). More than half respondents felt they needed more services, a proportion which significantly reduced at follow-up but remained high at 37.8%. Out-patient services, which included: an appointment to see a GP, Doctor, Nurse or Psychologist, was the most desired, closely followed by school-based services.

TABLE 15: SERVICE USE (NUMBER OF PEOPLE REPORTING CONTACTS, AND MEAN NUMBER OF CONTACTS)

| Variable | Baseline (n=302) | | Follow-up (n=302) | | Difference 95% |
|---|---|---|---|---|---|
| | n | mean contacts | n | mean contacts | FU-BL |
| Hospital (number of times) | 4 | 2.0 | 2 | 1.0 | -1.00 |
| Hospital (number of nights) | 4 | 2.5 | 2 | 1.0 | -1.50 |
| Drug and alcohol clinic (number of contacts) | 1 | 1.0 | 2 | 1.5 | 0.50 |
| Mental Health Clinic | 30 | 3.2 | 46 | 2.7 | -0.56 |
| Psychologist, Psychiatrist or Counsellor | 25 | 2.9 | 37 | 2.6 | -0.33 |
| Social worker | 7 | 2.7 | 6 | 2.2 | -0.55 |
| A&E | 4 | 1.8 | 5 | 2.8 | 1.05 |
| GP | 46 | 1.7 | 43 | 1.7 | -0.02 |
| Probation officer | 1 | 1.0 | 0 | 0.0 | -1.00 |
| Acupuncturist/Chiropractor | 1 | 4.0 | 1 | 1.0 | -3.00 |
| Helpline/Hotline | 35 | 3.8 | 54 | 3.0 | -0.81 |
| Group Meetings | 8 | 2.5 | 15 | 2.9 | 0.37 |

TABLE 16: MORE SERVICES NEEDED

| Variable | Baseline (n=302) | Follow-up (n=302) | Difference 95% | p-value 95% |
|---|---|---|---|---|
| | % | % | FU-BL | |
| Felt needed other services | 50.3% | 37.1% | -13.2% | 0.000 |
| Other services needed: School based services | 36.8% | 25.5% | -11.3% | 0.001 |
| Other services needed: Hospital services | 12.6% | 7.3% | -5.3% | 0.021 |
| Other services needed: Outpatient services | 41.1% | 29.5% | -11.6% | 0.000 |
| Other services needed: Services through your church, mosque or temple | 4.0% | 3.0% | -1.0% | 0.440 |
| Other services needed: Youth justice services | 5.3% | 3.0% | -2.3% | 0.127 |
| Other services needed: Drug and alcohol treatment | 2.6% | 2.0% | -0.7% | 0.565 |

## 3.7 EXAMINING OUTCOMES BY TYPE OF KOOTH USER

In this report we have looked at three different methods of categorising Kooth users, aiming to explore how Kooth members benefit from the peer support/community components of Kooth. The first method is based on their survey responses about their self-reported Kooth use. The second method is based on a latent class analysis using the Kooth-linked data of actual Kooth site use. The third method uses Kooth's theoretically derived categorisations of different Kooth user 'pathways', also based on Kooth-collected site use data.

### 3.7.1 Categorisation type 1: Kooth user-type based on survey self-report

The following three tables compare the difference between baseline and follow-up scores for three different groups of Kooth users.

Table 17 describes findings for those who only used the community space, that is they did not use the facility to chat or message with a counsellor, and they used at least one of the following 'community' areas of Kooth:

- Mini activities
- Discussion boards
- Live forum discussion
- Reading articles
- Writing articles
- Commenting on articles

The table shows that even among respondents using the community space only (n=133), statistically significant improvements were found across three outcomes: YP-CORE, SIDAS and Hope. Kooth users in this group had somewhat lower levels of difficulties on most variables at baseline compared with other types of Kooth users. They also experienced, on average, a larger reduction in suicidality compared to other Kooth users.

TABLE 17: COMPARISON BETWEEN BASELINE AND FOLLOW-UP OUTCOMES FOR "COMMUNITY SPACE"-ONLY USERS

| | Baseline (n=113) Mean | Follow-up (n=113) Mean | Difference FU-BL | p-value 95% | Pos/Neg scale |
|---|---|---|---|---|---|
| PAS | 6.61 | 6.52 | -0.09 | 0.654 | Neg |
| SDQ | 15.20 | 15.11 | -0.10 | 0.760 | Neg |
| YP-CORE* | 27.00 | 24.12 | -2.88 | 0.000 | Neg |
| SIDAS | 15.07 | 12.81 | -2.26 | 0.005 | Neg |
| KIDSCREEN-10 | 2.46 | 2.51 | 0.05 | 0.630 | Pos |
| HOPE | 10.18 | 11.50 | 1.32 | 0.001 | Pos |

* For YP-CORE the total number of observations was 115.

Table 18 shows the outcome scores for the remainder of the sample. This group included any Kooth users who engaged with Kooth counselling, as well as those who did not engage with counselling or the 'community' features listed above. This group expressed higher levels of suicidality at baseline, and did not see the same scale of reduction in this score at follow-up as the 'community space' group. However larger improvements were seen in the YP-CORE and HOPE scales for this group.

Table 19 gives the outcome scores for the small group of Kooth users who engaged with Kooth counselling but did not use the 'community' features listed above. The group is small and the differences between baseline and follow-up do not reach the threshold for statistical significance, however this group shows on average bigger improvements than the other groups in perception of the impact of difficulties on their life, and in reported quality of life (KIDSCREEN-10).

TABLE 18: COMPARISON BETWEEN BASELINE AND FOLLOW-UP OUTCOMES FOR PEOPLE WHO DID NOT USE EXCLUSIVELY "COMMUNITY SPACE" TOOLS

| | Baseline (n=169) | Follow-up (n=169) | Difference | p-value 95% | Pos/Neg scale |
|---|---|---|---|---|---|
| | Mean | Mean | FU-BL | | |
| AS | 6.98 | 6.62 | -0.36 | 0.089 | Neg |
| SDQ | 16.15 | 15.62 | -0.54 | 0.095 | Neg |
| YP-CORE* | 28.52 | 25.40 | -3.13 | 0.000 | Neg |
| SIDAS | 17.70 | 16.87 | -0.83 | 0.259 | Neg |
| KIDSCREEN-10 | 2.60 | 2.67 | 0.07 | 0.564 | Pos |
| HOPE | 9.73 | 11.30 | 1.57 | 0.000 | Pos |

* For YP-CORE the total number of observations was 143.

TABLE 19: COMPARISON BETWEEN BASELINE AND FOLLOW-UP OUTCOMES FOR PEOPLE WHO USED ONLY CHATTING OR MESSAGING WITH A COUNSELLOR SERVICES

| | Baseline (n=18) | Follow-up (n=18) | Difference | p-value 95% | Pos/Neg scale |
|---|---|---|---|---|---|
| | Mean | Mean | FU-BL | | |
| PAS | 7.00 | 6.89 | -0.11 | 0.847 | Neg |
| SDQ | 18.28 | 17.22 | -1.06 | 0.302 | Neg |
| YP-CORE* | 29.00 | 28.13 | -0.87 | 0.605 | Neg |
| SIDAS | 20.67 | 21.22 | 0.56 | 0.816 | Neg |
| KIDSCREEN-10 | 1.67 | 2.33 | 0.67 | 0.097 | Pos |
| HOPE | 8.28 | 9.44 | 1.17 | 0.213 | Pos |

* For YP-CORE the total number of observations was 15.

### 3.7.2 Kooth user-type based on latent class analysis of Kooth-provide site use data

Latent class analysis is a bottom-up approach to identify groups or subtypes of individuals. The analysis classifies individuals based on all of their reported Kooth use, considering overall number of logins and frequency of various activities, including emojis added to the journal. Given the variability in Kooth usage generally and by type of service, we classified Kooth users using a latent class approach. Before presenting the results of the latent class analysis, we illustrate the range and variability of Kooth use, overall and by type of activity.

Table 20 presents the Kooth-collected site use data for our evaluation sample of Kooth users. There was great variability in usage.

TABLE 20: KOOTH USE

| | n | Mean | SD | Min | Max |
|---|---|---|---|---|---|
| Logins | 275 | 9.77 | 15.60 | 0 | 140.0 |
| All Chats | 275 | 0.70 | 1.36 | 0 | 7.0 |
| DE Chats | 275 | 0.48 | 1.04 | 0 | 6.0 |
| DNE Chats | 275 | 0.21 | 0.60 | 0 | 4.0 |
| Chat Duration w/o DNEs | 275 | 24.70 | 56.29 | 0 | 329.6 |
| Messages | 275 | 4.28 | 6.57 | 0 | 44.0 |
| Messages Sent | 275 | 1.38 | 2.63 | 0 | 18.0 |
| Messages Received | 275 | 2.90 | 4.17 | 0 | 26.0 |
| Messages Received Therapeutic | 275 | 1.61 | 2.59 | 0 | 20.0 |
| Messages Received Admin | 275 | 1.29 | 2.19 | 0 | 14.0 |
| SUs Goals | 275 | 0.93 | 2.09 | 0 | 13.0 |
| Worker Goals | 275 | 1.12 | 2.07 | 0 | 11.0 |
| Journal Entries | 275 | 3.16 | 4.30 | 0 | 30.0 |
| Forums Viewed | 87 | 2.76 | 3.30 | 0 | 18.0 |
| Live Forums Viewed | 87 | 0.36 | 1.16 | 0 | 9.0 |
| Activities Viewed | 87 | 0.59 | 0.90 | 0 | 4.0 |
| Articles Viewed | 87 | 2.55 | 5.79 | 0 | 50.0 |
| Emoji: Disappointed | 275 | 1.91 | 3.89 | 0 | 24.0 |
| Emoji: Cry | 275 | 1.60 | 3.63 | 0 | 24.0 |
| Emoji: Neutral | 275 | 2.33 | 4.31 | 0 | 30.0 |
| Emoji: Rage | 275 | 0.44 | 2.40 | 0 | 21.0 |
| Emoji: Smile | 275 | 1.23 | 3.81 | 0 | 30.0 |
| Emoji: Wink | 275 | 0.27 | 1.88 | 0 | 21.0 |

Whilst some individuals did not make use of the tools available (although only 3 users reported zero logins), some of them used the site intensely. For instance, there were users who logged in 140 times against an average of about 9.8, and sent or received 44 messages, against an average of about 4.3. In terms of the other activities, Journal Entries were the more popular, with an average of about 3.2, followed by Forums (discussion boards) Visited, with an average of about 2.8. On average, the most common emoji used was the "neutral" (mean=2.33 entries), followed by the one expressing disappointment (1.91), and by the one expressing sadness ("cry") with an average of about 1.60 entries.

Table 21 presents the findings from the latent class analysis based on Kooth use. Our analysis identified three distinct types of Kooth users: (i) represented 199 users (72.5%) who had a low frequency of use, on average logging in 5.6 times over a one month period and who had 2.4 journal entries ; (ii) represented 56 users (20.5%) with a medium frequency of use and had on average 13.6 logins and an average chat duration (excluding those classified as not entering the chat (DNEs)) of 54.8 minutes and (iii) represented 20 high intensity users (7%), characterised by an average of 40.6 logins and an average chat duration without DNEs of 185.2 minutes.

TABLE 21: DESCRIPTION OF KOOTH USE ACCORDING TO THREE IDENTIFIED LATENT CLASSES

| Variable | Class 1: Low Kooth usage (n=199) | | | Class 2: Medium Kooth usage (n=56) | | | Class 3: High Kooth usage (n=20) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean (SD) | Min | Max | Mean (SD) | Min | Max | Mean (SD) | Min | Max |
| Logins | 5.61 (5.77) | 0 | 33.0 | 13.57 (12.61) | 2 | 58.0 | 40.6 (38.42) | 8 | 140.0 |
| All chats | 0.05 (0.22) | 0 | 1.0 | 1.61 (0.71) | 1 | 4.0 | 4.6 (1.31) | 2 | 7.0 |
| DE chats | 0.01 (0.1) | 0 | 1.0 | 1.09 (0.55) | 0 | 2.0 | 3.5 (1.28) | 2 | 6.0 |
| DNE chats | 0.04 (0.2) | 0 | 1.0 | 0.52 (0.81) | 0 | 3.0 | 1.1 (1.21) | 0 | 4.0 |
| Chat duration w/o DNEs | 0.09 (0.92) | 0 | 10.3 | 54.8 (31.73) | 0 | 132.5 | 185.22 (81.45) | 85.2 | 329.6 |
| Messages | 1.91 (2.79) | 0 | 16.0 | 8.18 (7.21) | 0 | 31.0 | 16.95 (10.87) | 3 | 44.0 |
| SUs goals | 0.52 (1.48) | 0 | 9.0 | 1.43 (1.89) | 0 | 8.0 | 3.6 (4.47) | 0 | 13.0 |
| Worker goals | 0.24 (0.54) | 0 | 4.0 | 2.32 (1.61) | 0 | 6.0 | 6.55 (2.78) | 2 | 11.0 |
| Journal entries | 2.44 (3.24) | 0 | 22.0 | 3.18 (3.2) | 0 | 16.0 | 10.2 (8.41) | 0 | 30.0 |
| Emoji: Disappointed | 1.23 (2.76) | 0 | 17.0 | 2.27 (3.49) | 0 | 16.0 | 7.7 (7.92) | 0 | 24.0 |
| Emoji: Cry | 1.09 (2.58) | 0 | 17.0 | 1.25 (2.41) | 0 | 12.0 | 7.6 (7.96) | 0 | 24.0 |
| Emoji: Neutral | 1.66 (3.06) | 0 | 17.0 | 2.07 (3.22) | 0 | 16.0 | 9.8 (8.78) | 0 | 30.0 |
| Emoji: Rage | 0.14 (1.06) | 0 | 12.0 | 0.55 (2.4) | 0 | 16.0 | 3.15 (6.76) | 0 | 21.0 |
| Emoji : Smile | 0.71 (2.36) | 0 | 17.0 | 1.09 (2.95) | 0 | 16.0 | 6.85 (9.49) | 0 | 30.0 |
| Emoji: Wink | 0.18 (1.19) | 0 | 12.0 | 0.29 (2.14) | 0 | 16.0 | 1.05 (4.7) | 0 | 21.0 |

Table 22 presents the mental health related outcomes for each of the three latent classes based on Kooth use. Looking at the differentials between baseline and follow-up, we notice that the larger improvements are, somewhat surprisingly, obtained within the low-usage group, whilst the picture is more mixed when looking at medium and high-usage classes.

TABLE 22: MENTAL HEALTH RELATED OUTCOMES DESCRIPTIVE STATISTICS BY LATENT CLASS

| Variable | Class 1: Low usage (n=187–199) | | | Class 2: Medium usage (n=54–56) | | | Class 3: High usage (n=17–20) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Baseline Mean | Follow-up Mean | Difference FU-BL | Baseline Mean | Follow-up Mean | Difference FU-BL | Baseline Mean | Follow-up Mean | Difference FU-BL |
| PAS | 6.79 | 6.44 | -0.35* | 6.91 | 6.75 | 7.10 | 7.25 | 7.6 | 0.5 |
| SDQ | 15.51 | 14.97 | -0.54** | 16.29 | 16.34 | 16.88 | 17.15 | 17.35 | 0.47 |
| YP-CORE | 27.39 | 24.27 | -3.12*** | 28.94 | 26 | 29.12*** | 29.35 | 27.24 | -1.88 |
| SIDAS | 15.54 | 13.37 | -2.17*** | 18.25 | 18.89 | 21.06 | 20.95 | 22.25 | 1.19 |
| KIDSCREEN-10 | 2.43 | 2.55 | 0.12 | 2.77 | 2.55 | 2.43 | 3.35 | 2.85 | 0.42 |
| HOPE | 10.18 | 11.78 | 1.60*** | 8.52 | 10.14 | 8.54** | 9.95 | 11.7 | 3.16 |
| Self-harm | 0.44 | 0.32 | -0.11*** | 0.55 | 0.47 | 0.59 | 0.65 | 0.55 | -0.04 |
| Arguing with parents | 2.67 | 2.8 | 0.13** | 2.65 | 2.75 | 2.61 | 2.7 | 2.7 | 0.09 |
| Close to parents | 2.33 | 2.27 | -0.06 | 2.27 | 2.16 | 2.22 | 2 | 2.1 | -0.12 |
| Loneliness | 1.61 | 1.79 | 0.18*** | 1.68 | 1.79 | 1.6) | 1.4 | 1.55 | -0.05 |
| Self-esteem | 2.73 | 3.03 | 0.30** | 2.19 | 2.57 | 2.28 | 2.15 | 2.5 | 0.22 |

* p<0.05, ** p<0.01 ***p<0.00

### 3.7.3 Kooth's theoretically derived pathways

Kooth have identified a number of different pathways to describe the ways that users use Kooth. We have grouped them as follows to compare outcomes:

- Peer support focused (no synchronous chats)
  - Active peer support user (n=41)
  - Proactive peer support user (n= 50)
  - Read-only user (n= 15)
- Self-directed, no synchronous chat and no peer support interaction
  - Active self-directed user (n= 64)
  - Proactive self-directed user (n= 31)
- Direct therapeutic engagement
  - Ongoing support user (n= 9)
  - Reactive intermittent user (n= 26)
  - Reactive single session user (n= 44)
  - Structured user (n= 4)
- Little or no engagement
  - Asynchronous support user (n= 9)
  - Inactive user (n= 2)

We did not use the last group (Little or no engagement) in analyses, as so few participants in the evaluation fitted this category. Note that 'proactive' peer supporters are those who had written content for peers (e.g. commented on a discussion) three or more times, whereas 'active' peer support users had written content for peers 1-2 times.

Table 23 presents outcome differences by pathway type (as observed on the 11th February). There was not a single pathway which showed consistently greater improvements than the others in terms of outcomes. However, pathway 1 led to the best improvement in terms of HOPE, pathway 2 in terms of Covid 19-related anxiety (PAS), and pathway 3 in terms of YP-CORE (though only marginally better than pathway 1).

TABLE 23: OUTCOMES' COMPARISON BETWEEN BASELINE AND FOLLOW-UP BY PATHWAY GROUP

**PATHWAY 1: Peer support – no synchronous chats (n=94–100)**

| Variable | Baseline Mean | Follow-up Mean | Difference FU-BL | p-value 95% | Pos/Neg scale |
|---|---|---|---|---|---|
| PAS | 7.14 | 6.81 | -0.33 | 0.216 | Neg |
| SDQ | 15.36 | 15.03 | -0.33 | 0.324 | Neg |
| YP-CORE | 27.11 | 24.18 | -2.93 | 0.000 | Neg |
| SIDAS | 14.51 | 12.69 | -1.82 | 0.066 | Neg |
| KIDSCREEN-10 | 2.63 | 2.69 | 0.06 | 0.691 | Pos |
| HOPE | 10.05 | 11.87 | 1.82 | 0.000 | Pos |
| Self-harm | 0.42 | 0.30 | -0.12 | 0.010 | Neg |
| Arguing with parents | 2.66 | 2.80 | 0.14 | 0.066 | Pos |
| Close to parents | 2.20 | 2.18 | -0.02 | 0.741 | Pos |
| Loneliness | 1.49 | 1.83 | 0.34 | 0.000 | Pos |
| Self-esteem | 2.84 | 2.99 | 0.15 | 0.309 | Pos |

**PATHWAY 2: Self-directed, no synchronous chat and no peer support interaction (n=82–88)**

| Variable | Baseline Mean | Follow-up Mean | Difference FU-BL | p-value 95% | Pos/Neg scale |
|---|---|---|---|---|---|
| PAS | 6.39 | 5.99 | -0.40 | 0.193 | Neg |
| SDQ | 15.19 | 14.59 | -0.60 | 0.162 | Neg |
| YP-CORE | 27.21 | 24.37 | -2.84 | 0.000 | Neg |
| SIDAS | 14.93 | 13.06 | -1.88 | 0.044 | Neg |
| KIDSCREEN-10 | 2.31 | 2.42 | 0.11 | 0.295 | Pos |
| HOPE | 10.41 | 11.48 | 1.07 | 0.025 | Pos |
| Self-harm | 0.43 | 0.35 | -0.08 | 0.145 | Neg |
| Arguing with parents | 2.69 | 2.77 | 0.08 | 0.357 | Pos |
| Close to parents | 2.57 | 2.42 | -0.15 | 0.052 | Pos |
| Loneliness | 1.74 | 1.75 | 0.01 | 0.899 | Pos |
| Self-esteem | 2.89 | 3.30 | 0.41 | 0.061 | Pos |

TABLE 23 (CONTINUED): OUTCOMES' COMPARISON BETWEEN BASELINE AND FOLLOW-UP BY PATHWAY GROUP

**Pathway 3: Direct therapeutic engagement (n=72–76)**

| Variable | Baseline Mean | Follow-up Mean | Difference FU-BL | p-value 95% | Pos/Neg scale |
|---|---|---|---|---|---|
| PAS | 6.88 | 6.80 | -0.08 | 0.770 | Neg |
| SDQ | 16.57 | 16.49 | -0.08 | 0.881 | Neg |
| YP-CORE | 28.71 | 25.75 | -2.96 | 0.001 | Neg |
| SIDAS | 19.11 | 19.13 | 0.03 | 0.980 | Neg |
| KIDSCREEN-10 | 2.92 | 2.66 | -0.26 | 0.144 | Pos |
| HOPE | 9.25 | 10.93 | 1.68 | 0.005 | Pos |
| Self-harm | 0.58 | 0.49 | -0.09 | 0.146 | Neg |
| Arguing with parents | 2.71 | 2.84 | 0.13 | 0.175 | Pos |
| Close to parents | 2.17 | 2.15 | -0.03 | 0.708 | Pos |
| Loneliness | 1.63 | 1.78 | 0.14 | 0.109 | Pos |
| Self-esteem | 2.00 | 2.48 | 0.48 | 0.016 | Pos |

Table 24 looks at whether the identified pathways (as observed on the 11th February) were related to survey self-reported improved management of emotions. We found that this was "very true" or "somewhat true" for more than 66% of the users in pathway 1 and pathway 2, but was "not at all true" for about 45% of users in pathway 3.

TABLE 24: I HAVE LEARNT WAYS TO MANAGE MY EMOTIONS BETTER

| PATHWAY 1: Peer support – no synchronous chats | n | % |
|---|---|---|
| Not at all true | 32 | 34.4 |
| Somewhat true | 47 | 50.5 |
| Very true | 14 | 15.1 |
| **PATHWAY 2: Self-directed, no synchronous chat and no peer support interaction** | **n** | **%** |
| Not at all true | 27 | 36.0 |
| Somewhat true | 40 | 53.3 |
| Very true | 8 | 10.7 |
| **PATHWAY 3: Direct therapeutic engagement** | **n** | **%** |
| Not at all true | 33 | 45.2 |
| Somewhat true | 24 | 32.9 |
| Very true | 16 | 21.9 |

Table 25 looks at whether the identified pathways (as observed on the 11th February) were associated with having learnt strategies and skills for helping users when they were worried about their mental health. This was "somewhat true" or "very true" for about 60% of the users in pathway 2, but for about 70% of the users in pathway 1 and pathway 3.

TABLE 25: I HAVE LEARNT STRATEGIES AND SKILLS FOR HELPING MYSELF WHEN I AM WORRIED ABOUT MY MENTAL HEALTH

| PATHWAY 1: Peer support – no synchronous chats | n | % |
|---|---|---|
| Not at all true | 28 | 30.4 |
| Somewhat true | 45 | 48.9 |
| Very true | 19 | 20.7 |
| **PATHWAY 2: Self-directed, no synchronous chat and no peer support interaction** | **n** | **%** |
| Not at all true | 28 | 37.3 |
| Somewhat true | 32 | 42.7 |
| Very true | 15 | 20.0 |
| **PATHWAY 3: Direct therapeutic engagement** | **n** | **%** |
| Not at all true | 20 | 27.0 |
| Somewhat true | 32 | 43.2 |
| Very true | 22 | 29.7 |

Table 26 looks at whether the identified pathways (as observed on the 11th February) were associated with an increased self-reported likelihood to seek help for mental issues. For all pathways, the sum of the responses "somewhat true" and "very true" was close to 80%.

TABLE 26: AS A RESULT OF KOOTH, I AM MORE LIKELY TO SEEK HELP FOR MENTAL HEALTH ISSUES

| PATHWAY 1: Peer support – no synchronous chats | n | % |
|---|---|---|
| Not at all true | 21 | 22.6 |
| Somewhat true | 41 | 44.1 |
| Very true | 31 | 33.3 |
| **PATHWAY 2: Self-directed, no synchronous chat and no peer support interaction** | **n** | **%** |
| Not at all true | 17 | 23.0 |
| Somewhat true | 34 | 46.0 |
| Very true | 23 | 31.1 |
| **PATHWAY 3: Direct therapeutic engagement** | **n** | **%** |
| Not at all true | 16 | 21.6 |
| Somewhat true | 31 | 41.9 |
| Very true | 27 | 36.5 |

Table 27 looks at whether the identified pathways (as observed on the 11th February) were associated with an increased self-reported confidence in seeking help for mental health issues. In the cases of pathway 2 and pathway 3, the sum of the responses "somewhat true" and "very true" was about 75%. In the case of pathway 1, this percentage was found to be slightly lower than 70%.

TABLE 27: BECAUSE OF KOOTH, I AM MORE CONFIDENT ABOUT HOW TO SEEK HELP FOR MENTAL HEALTH ISSUES

| PATHWAY 1: Peer support – no synchronous chats | n | % |
|---|---|---|
| Not at all true | 30 | 32.3 |
| Somewhat true | 38 | 40.9 |
| Very true | 25 | 26.9 |
| **PATHWAY 2: Self-directed, no synchronous chat and no peer support interaction** | **n** | **%** |
| Not at all true | 20 | 27.0 |
| Somewhat true | 40 | 54.1 |
| Very true | 14 | 18.9 |
| **PATHWAY 3: Direct therapeutic engagement** | **n** | **%** |
| Not at all true | 18 | 24.3 |
| Somewhat true | 38 | 51.4 |
| Very true | 18 | 24.3 |

### 3.8 KOOTH'S PEER TO PEER (P2P) MEASURE AND ASSOCIATIONS WITH OUTCOME MEASURES

The linked Kooth data included information on users' 'within site' ratings of Kooth content. We examined correlations between these and the outcome measure adopted in the LSE Kooth evaluation.

The P2P measure is based on data collected via the Kooth website. The emoji-based P2P score was the direct response to the following question: "Did you find this part of Kooth helpful" which Kooth users see when they have been looking at a discussion topic or article, or the response to the question "Did you find it helpful to share your own post?" at the point at which they have just submitted a discussion post or article (i.e. before they know whether it will pass moderation or be commented on).

The emojis represent a 5-point Likert scale where 1 = no, 2 = Not really, 3 = Don't know, 4 = A bit, 5 = Loads!. If they select 3 'don't know' they don't go further. If they select 4 & 5 they are asked why the feature was helpful, with four statements offered as a possible response. If a user selects 1 or 2 for this question, they are then asked what they were hoping for from this part of Kooth, with the same four statements offered as possible answers.

The four statements are:

1. It helped me relate to others
2. I have learned some skills I can try with others
3. I feel better about myself
4. I learned something important to me today

Table 28 presents a series of descriptive statistics, looking at the individual average scores of the P2P measure for different sample subsets.

The first row of the Table presents the average score for all those who had responded to this question at least once on the Kooth website, whilst the following two rows present the average scores given for articles and discussions separately. The

last four rows look at the subsets of users who answered, when thinking about how Kooth was helpful to them, "understanding myself", "relating to others", "learning skills" and "important to me". The sizes of the samples for these four subsets are small.

Table 29 presents the pairwise correlations, for the full sample, between mean P2P measure and the LSE evaluation outcome measures at follow-up. The subsample numbers were too small for further investigation. We observe that most of the correlations are not significant at the 5% level, with the exception of "Self-esteem", which shows a positive (0.244) correlation level. This association suggests that those who gave higher ratings to Kooth discussions or articles during the study period were also more likely to gain in self-esteem over that period. Furthermore, we notice that the association between report of self-harm and P2P scores is close to a 10% significance level, and is a negative correlation, suggesting that those giving higher P2P ratings are also those less likely to report self-harm (See Table 29).

TABLE 28: PEER TO PEER SCORES RECORDED ON THE KOOTH WEBSITE: DID YOU FIND THIS PART OF KOOTH HELPFUL?

| P2P score* | Number of LSE Kooth users responding | Mean P2P score | SD | Min Mean Score | Max Mean Score |
|---|---|---|---|---|---|
| P2P score: overall | 81 | 4.23 | 0.66 | 3 | 5 |
| P2P score: articles | 30 | 4.28 | 0.63 | 3 | 5 |
| P2P score: discussions | 67 | 4.24 | 0.69 | 3 | 5 |
| Reason for answer P2P: understand myself | 23 | 4.54 | 0.58 | 3 | 5 |
| Reason for answer P2P: relate to others | 45 | 4.44 | 0.48 | 4 | 5 |
| Reason for answer P2P: learn skills | 13 | 4.52 | 0.50 | 4 | 5 |
| Reason for answer P2P: important to me | 23 | 4.38 | 0.57 | 3 | 5 |

* In case of multiple responses, the P2P scores presented in the table correspond to the user's average.

TABLE 29: CORRELATIONS BETWEEN OVERALL PEER TO PEER AVERAGE SCORE AND SURVEY OUTCOME MEASURES

| Outcome | Correlation | Significance level | Pos/Neg outcome orientation |
|---|---|---|---|
| PAS | -0.069 | 0.539 | Neg |
| SDQ | -0.077 | 0.494 | Neg |
| YP-CORE | -0.127 | 0.260 | Neg |
| SIDAS | -0.113 | 0.315 | Neg |
| KIDSCREEN-10 | 0.078 | 0.491 | Pos |
| HOPE | 0.164 | 0.144 | Pos |
| Self-harm | -0.232 | 0.166 | Neg |
| Arguing with parents | -0.084 | 0.457 | Pos |
| Close to parents | 0.163 | 0.149 | Pos |
| Loneliness | -0.056 | 0.620 | Pos |
| Self-esteem | 0.244 | 0.030 | Pos |

## 3.9 QUALITATIVE ANALYSIS OF OPEN RESPONSES IN SURVEY

### 3.9.1 Self-reported use of Kooth, and reasons for not returning to the site

In the follow-up survey, respondents were asked to report on how often they had visited Kooth since baseline, about one month previously. About half the sample reported visiting just a few times, and nearly a quarter reported higher levels of use (Table 30):

Twenty-three respondents reported not having returned to Kooth at all and were asked for their reasons (Table 31), which were mainly divided between not thinking Kooth could help, or not having thought to return, but considering that Kooth could be helpful.

TABLE 30: HOW MANY TIMES HAVE YOU VISITED KOOTH SINCE THE FIRST TIME WHEN YOU TOOK THE SURVEY?

| | n | % |
|---|---|---|
| 2–5 times | 143 | 48 |
| More than 5 times | 66 | 22 |
| Never since the first survey | 23 | 8 |
| Once | 64 | 22 |

TABLE 31: IF NEVER, WHY?

| | n |
|---|---|
| I haven't had any particular problems since I first registered with Kooth | 1 |
| I have had problems but I didn't think Kooth could help | 10 |
| I didn't think of coming back to Kooth, but Kooth might help me | 12 |

Of those who didn't think of coming back, but thought Kooth might help them, eight provided additional comments:

- It hasn't really occured to me
- I'm busy
- I registered to Kooth for advice to help my friend and realised it could help me but I forgot about it.
- I forgot my login
- I forgot about it
- I don't know how to ask for help or support because I'm emotionally stunted
- Haven't been able to access it due to family taking my electronic devices off me, something they love doing one of their many hobbies
- Hasn't crossed my mind

Of those who said they had problems but didn't think Kooth could help them, nine provided additional comments:

- Talking about how I feel won't change anything. A counsellor who doesn't know me can only do so much – and that isn't a lot. Messaging a stranger would just be awkward and they might overreact. The forums aren't very insightful, but it's not Kooth's fault. They can't exile their young users.
- I suppose I just want to do the work to fix the problems or I just can't focus on doing something like that
- I haven't had time
- I found other resources that worked better for me
- I don't really like the way it works

- I don't like talking about my emotions nor do I really want to have to repeat everything I've done already
- Forgot about it
- Didn't want to ask for help
- Didn't seem that helpful. I found some alternative resources – like CBT programs on YouTube for social anxiety and depression

### 3.9.2 Respondents' views on discussion boards

Respondents who had used the discussion boards were invited to tell us more about the ways in which the discussion boards were helpful or unhelpful. 82 respondents made additional comments about use of the discussion boards

By far the most common type of comment was that it was beneficial to know that other people had similar problems (46 comments around this theme) 'I could see it wasn't just me', or to hear from other people with similar problems. Some of these also mentioned that this made them feel less lonely 'I feel less alone reading about other people's struggles'. Six specifically used the word 'relatable' mentioned in these comments either that the discussions were relatable, or that the discussions made them feel more relatable themselves:

> Relatable which made me feel less like a weirdo

> Made me feel like I could relate to people

The second most common theme was about the sense of community (19 comments).

> People are really nice there and made me feel a bit better

> Seeing how others are doing and staying in touch with others that way

Several comments incorporated both these themes. This was the only response to this question which used the specific word 'community', although there were five additional responses to other questions which used this word:

> I was able to read the stories of others and realise that there are so many people who are also struggling and that there is a community of people ready to help

15 respondents made comments around the theme of getting advice. This included learning from people's experiences, and some comments linked to the 'sense of community' theme:

> Help me understand some coping methods

> Easy to relate to others about things you have experienced and are able to see the ways they can help it.

> You get to speak to others around your age about things that are bothering you and get unbiased advice and support

A further theme related to giving advice, support or help to others. Six responses related to this theme. This example combines several themes:

> It makes you feel less alone to know other people have similar problems or sometimes even worse problems and gives you some kinda purpose to be able to speak to them and provide advice/help but it can also be discouraging to see how much sadness there is in the world and how many people are going through bad things, it can make you feel powerless

The sadness from seeing others' problems, referred to in the previous quote, was also mentioned by another respondent. In addition to these two, there were only seven other comments which could be taken as negative:

> Didn't feel like they helped with my issues, but may for other ones.

> It was helpful because I could vent about how I was feeling but unhelpful because I couldn't see anybody responding

> No one replies

> It was helpful posting about my problem and unhelpful because I never get to speak to any counsellor

> Helpful, but moderation process for posting things takes too long.

> They were interesting but didn't feel like it helped

Additional themes with fewer responses included having the opportunity to "vent", valuing the anonymity of the discussion boards, specific comments on the value of communicating with people of the same age, and the discussion boards providing a welcome distraction.

TABLE 32: DISCUSSION BOARD FEEDBACK THEMES SUMMARY

| Theme | n |
|---|---|
| Others with similar issues | 46 |
| Community/social/belonging | 19 |
| Getting support and advice | 15 |
| Giving support and advice | 6 |
| More negative aspects | 9 |

82 different respondents are included in these figures

### 3.9.3 Comments on mini-activities

Fourteen respondents answered a free-text question asking about any particular helpful or unhelpful aspects of the mini-activities. Four referred to being cheered up by the activities (playlist, coping box).

> The good mood playlist was a really good idea because music is a big part of my life and listening to it can instantly up my mood.

> I think the playlist one helped a lot, whenever I was sad, I could turn to it, but some of the other activities were like makes you feel better there and then but not over a long period of time

Five respondents referred to using activities for self-calming (where this was in connection with a particular activity those mentioned were coping box, activity jar, bubble breathing).

> The activity jar has been a very big success. I now feel like I have a clear plan for what to do whenever I'm feeling anxious, whereas before I just made myself get more worked up

> I tried the box activity and it was so helpful. I'm on the autistic spectrum so to have a box of sensory things to cheer me up was a wonderful idea.

One respondent may have been prompted to try out more activities because of taking part in the survey:

> The less well-known activities were really helpful because I tried them for the first time – like bubble breathing, practising being present, and drawing a song!

One respondent specifically referred to being helped by the 'changing your thoughts on yourself' activity. There were only two negative comments, one respondent just felt they were stupid, while another said that the activities were sometimes patronising.

Several respondents also used the additional free-text questions at the end of the survey to comment further on mini-activities. The recommendations were as follows:

> More mini activities that can be used in a public place.

> More mini activities! They're great!

> More mini activities that could be helpful. Something that feels more interactive so people feel less lonely?

> More interactive mini games that you can actually play on your phone rather than doing it yourself if that makes sense

### 3.10 PARTICIPANTS' RECOMMENDATIONS FOR KOOTH

Seventy-six participants made recommendations of improvements to Kooth, while six individuals used the open response field to say they were happy with Kooth as it is.

The most common type of recommendation was to improve access to counsellors, including longer availability hours and shorter waiting list, with several specifically saying they would like access at night. Relatedly, several commented on wanting processes to be sped up, including moderation times, and the suggestion was made that users be alerted when their articles or messages had been posted, and that users should be able to see all their own posts together in one place.

A few participants wanted to receive communications or reminders from Kooth outside the Kooth platform (e.g. by email or text). This is not currently possible as Kooth is anonymous and does not collect contact details. Users also suggested adding more activities, including game-style activities that you can play on your phone.

TABLE 33: PARTICIPANTS RECOMMENDATIONS FOR IMPROVEMENTS TO KOOTH

| Recommendation | n |
|---|---|
| Improve access to counsellors (including longer hours, shorter queues, easier access, bookable appointments) | 15 |
| Faster response (counselling, chat or moderation) | 10 |
| Add more activities | 7 |
| Make it an app | 5 |
| Contact users outside of Kooth to remind them about it | 4 |
| Add search/filter/filter content by age | 4 |
| Give notifications (e.g. of postings) | 3 |
| Have counsellor specialisms | 3 |
| Make it possible to see all your own postings together | 2 |
| A diversity dictionary | 1 |
| A quotes page | 1 |
| Change your username option | 1 |
| Trigger warnings for upsetting topics | 1 |

## 3.11 THEMES FROM THE QUALITATIVE ANALYSIS OF INTERVIEWS

Interviews were carried out to further explore respondents' use of Kooth, in particular, the peer support aspects. Emails were sent to 27 survey respondents who had said they might be willing to take part in an interview, with a follow-up text sent a few days later. Interviews were carried out with nine individuals with a tenth providing comments by text. Interviewees could choose between a phone or Zoom interview, only one opted for Zoom. Two respondents wanted to take part in an interview but did not want to speak; for these two the interviews were carried out via webchat. The average age of interviewees was 16 (range 14 to 17), five were female, three male and one identified as non-binary. The main themes arising from thematic analysis of the interviews are presented below. Pseudonyms are used.

Key themes from the survey comments, such as the importance of hearing from other young people, and the sense of community emerge again here, and we sought out further detail on the ways in which Kooth provided these benefits, and the type of changes users experienced, as well as some aspects of Kooth which were less helpful.

### 3.11.1 People visit Kooth for different reasons and even if they do not visit can feel support from 'Knowing it's there'

Four interviewees referred to the reassurance and support they felt simply from knowing Kooth was available to them if they felt the need, as Oli and Aisha explain:

> Kooth is a massive help, even if it's not used, it is mentally reassuring to know it is there.

> It makes me feel better, like I'm not going to go through teens things alone, Kooth is always there for me.

Sometimes users went on Kooth when they were feeling down or upset, or something bad had happened, or were feeling agitated or anxious. However, some interviewees went on when they felt fine, sometimes to see if they could offer any support. Storm described going to Kooth sometimes to receive some positivity and sometimes to give some positivity to others, while Carla explained:

> If I'm upset or had a bad day, I'll go the chat section and see if anyone else is having a bad day and it kind of lifts me up a bit because I know I'm not the only one.

Two interviewees were also sometimes encouraged to use Kooth by parents if they were feeling down, while another did not want their parents to know about their use of Kooth as he was concerned, they would worry too much.

Most interviewees described the discussions and articles by peers as the most useful part of Kooth, while two, although saying they benefited greatly from the peer support felt the counselling was the most useful part. Aisha was one of the former, but also appreciated the supportive personal messages from the Kooth team, based on her journal entries.

Aisha commented:

> Before, every time I felt down, I didn't know what to do, I'd just sleep. Now, everytime I feel down, I just go on Kooth, I read some articles, I depend on Kooth a lot, you know what I mean?

Kooth can be a place where people learn strategies for addressing their mental health needs, but users also 'hop on Kooth' or 'jump on Kooth' (as Lyra and Mateo put it) as a strategy in itself. Interviewees referred to using it at school or when out, and not just at home.

### 3.11.2 Using Kooth as a strategy for calming or distracting

Interviewees described going on Kooth as a coping strategy as Nadia explains:

> I go on Kooth when I'm extremely overwhelmed or stressed, because I have very bad social anxiety

Mateo took ideas from other users as well as from Kooth's mini-activities:

> Sometimes I look through the comments on the posts, I look to see what they do to cope during struggling times, even activities like origami, it really helps to make me calm down.

Carla also referred to avoiding self-harm:

> I think [it's good] for people who are really anxious, looking for place to calm; also there's lots of discussion there about how toget over urge to self harm….
>
> Kooth is like an escape, I can learn new strategies and apply them when I go back to school. I will carry on using it when I go back to school

Adam, who of all the interviewees had the most negative views about Kooth, said:

> It was calming because I could leave my stressful life behind for 20 minutes and get lost in the posts, like they were stories from a book, and that I could relate to them gave me a sense of community and like there's others who are there for me if I called upon them. After reading I would feel cathartic and have a positive outlook afterwards until the next problem in my life occurred.

Other interviewees, including Hugo, also referred to Kooth offering a welcome distraction, especially the community and activities parts of Kooth, without mentioning calming specifically:

> Reading posts was a better, more educational, distraction than scrolling social media

Mini-activities could also be a welcome distraction – Hugo described how this helped him when he was bored – a time he was most likely to struggle. The music-related activities were particularly popular for distraction.

### 3.11.3 The value of advice and experiences of peers, rather than professionals

A strong theme emerging from the interviews was the value of communications from peers in an anonymous space. This was experienced through Discussions, Articles and Comments, as well as in one case a Live Chat.

Lyra:

> I just find it a lot easier to talk with people who have had the same experiences as me. [The users] they don't pity you, but they try to understand your situation and then try to help you, and the children who have been through these things, they know what you're talking about...Counsellors will tell me, oh talk to your parents about it, try to get them to understand, but kids will know that things don't work so they use their advice from personal experiences that have helped them.

Similarly, Carla said that while the counselling component was helpful, it was not as helpful as the discussions, as there were so many points of view. Aisha also said she mainly got helpful information and advice from the writing of peers. Carla continued:

> I feel like it's really different [getting advice from young people] most professionals say the same things but younger people they've all got different ways of dealing with it and they get it from all different places and they can share it on one platform…it's from people who have literally been in the same position and you they know what it's like and they're sharing things that would've helped them.

Storm:

> Other young people are telling you what actually worked for them; professionals don't necessarily share your experiences

Storm found it really inspirational to read what people wrote about their experiences and strategies and to read people's poems:

> Normally someone's writing but they're not actually going through it themselves, this is different.

Nadia:

> The stuff written by young people (compared to the stuff written by Kooth) is much easier for me to comprehend and relate to because they're the same age as me and they have the same vocabulary as me, I guess? I'll understand it better.

Although Storm found the counselling the most helpful part she explained the value of the peer interactions, echoing Carla's point about many points of view:

> I think the big thing is being able to see other people's perspectives… you have people your age around you at school and everywhere you go, but you don't always get to relate to them the way you do on Kooth, because they might be in similar situations to you, or even the same situation, or they might just have nothing similar to you but you know they're

> here for their own reasons and you are too and it's just like we're all here together and we're helping each other through this even though we might not know what we're helping each with, in a way.

Read-only users still benefit

Hugo described himself as 'just taking' from Kooth. He is one of the users who according to the typologies above would classify as 'low usage' and a 'Read only' user, as he only read other people's content but did not contribute himself. However, his example shows how such users can gain greatly from using Kooth in this way:

> I read a lot of things and I like disagree with that, I agree with this, and I took bits of maybe 100 different posts and kind of made my own essay from it, like my own strategy based on lots of other people's.

Nadia who had been recommended to use Kooth by her psychotherapist also found the contributions from other users the most useful part. She said although she didn't write much herself, she nevertheless felt like she was having a conversation when she read people's discussions and articles

> When I go onto the discussions and see people talk about their likes and dislikes, it feels like I'm communicating through it, with their likes and dislikes, like my favourite band and the things I do, people feel the same way and have the same opinions as you, compared to my friends in real life who might not understand.

### 3.11.4 Finding people going through the same things

Mateo, like others, including Nadia above, referred to 'talking' or having 'conversations' on Kooth even when referring to discussions that were moderated with several days between posts being written and published:

> I thought it would be just a load of counsellors but then I found it was full of teenagers that had the same problems as me, and that really helped and that's why I kept using it over and over again…It's just been really nice to talk, even to strangers, but strangers that I know have the same problems as me, it's very reassuring

Several respondents referred to having felt they were the only person who felt like they did until they came to Kooth, and that finding this was not the case was a great 'relief' (Lyra).

Carla:

> It made me feel much less worried because I could see other people my age were using it and they could have had the same struggles as me

Hugo:

> I would recommend it to anyone who's unsure what's going on with them, and they've always been a happy kid and like everything's fine at school, and a perfect life and been quite privileged and all of a sudden, you feel wrong, and it's like, Why am I feeling like this? and then it's quite useful to see that you're not the only one, and that you are like other people, our age, who are also all of a sudden randomly waking up one day feeling slightly off.

As well as the relief Hugo felt when he found other people who felt like him, knowing he was from a privileged background and feeling he should not be entitled to have problems, he also found that seeing people with more serious problems helped him to have some perspective:

> It kind of made me feel, like it was okay to feel how I felt, but the facts leading up to it weren't that important compared to some of the stuff I was reading [from other Kooth users], and so I guess some it kind of put into perspective, now I wasn't saying how dare me feel this way it was more well look, let's be real, you can you know, this is upsetting, your relationship's upsetting you, but there are people who are saying, like their parents abused them or whatever and I'm not in those conditions so it's kind of pull yourself together a bit.

### 3.11.5 Finding people like you

The reassurance of finding 'people like me' was not just to do with mental health struggles, but also aspects of identity. Kooth had been really important for Nadia and affirming of her identity. In the 'real world' she felt criticised by peers because of her interests not aligning with theirs, but on Kooth she found people with the same likes and dislikes. She felt that anyone struggling with their identity would benefit from Kooth. Like most interviewees, she had recommended Kooth to a friend who was also struggling.

### 3.11.6 Giving advice, on and off Kooth, and the personal benefits

While Hugo had not contributed to discussions on Kooth, he had taken his learning and experiences from Kooth to give advice to peers outside Kooth, including recommending peers to use the site when they reported having difficulties. He also passed on to friends specific pieces of advice he'd picked up from Kooth discussion boards when he recognised their difficulties as similar to those he'd read about on Kooth.

Several users referred to how giving feedback to others made them feel good, even if they did not describe it as offering support, and so in some cases did not say in the survey that they had offered support. Adam felt the offering of support was more important than receiving it, for him:

> I got a sense of fulfilment when I commented on their posts like I'd helped them or given them something to help themselves, it was my favourite feature of the whole app…The little I could do to offer them help made me feel good and it made me feel hopeful for the other person. I'd say it was more important [than reading what others wrote]

Carla:

> I feel quite good because I know when other people have helped me, I feel good, so if I help someone else, I feel quite good about it

This was a common sentiment. Storm did not usually comment on posts except sometimes when there were no replies, then even if not having any specific relevant experience or advice Storm might try to say something supportive and tell the person that they had been understood.

Storm had written an article and felt it was a good experience:

> It really had an impact because it's a new way, especially with all the technology with school and stuff, it was a way to talk to someone, and a big amount of people, without having to know them. I find face-to-face really hard, and this way I can express myself much better.

Interviewees described these positive feelings from attempts to help others, but there are issues with the way communications work on Kooth that somewhat limited these benefits, as we will see.

### 3.11.7 Discussions, and some problems

Interviewees referred to some interrelated difficulties with how things work on Kooth discussions, which, if addressed, could really enhance the experience. All posts are moderated, but this process is slow, often taking several days, and somewhat opaque, as users are not sure whether their contribution has been posted and are not alerted if it has not passed moderation. Relatedly, interviewees reported that they often found it impossible to find things they had written and so did not know whether there were any replies. Where posters did find what they had written, it is very common for discussion topics raised not to get any replies, even if asking a direct question to other users, and it is not possible to see if anyone has read your post.

Adam had posted two topics but never had a reply, when asked how he felt about that he said:

> Somewhat marginalised, but what I had to say was not what everybody was interested in. I was happy to think they'd at least read it and been able to relate or sympathised with me.

Nadia suggested that, while she wouldn't want it to be anything similar to a 'like' on social media platforms, she felt she would rather know if her contributions were being read. If they were, this would put her at ease, whereas if they were not, she said it would tell her not to post again. She described the way she contributed to discussions:

> If someone's talking about something and I agree, I'll say yeh that makes sense, and if someone's talking about my favourite band I'll say, this is what I like about them as well and these are my favourite songs, whenever I'm stressed this is the method I'll do while listening to their songs… it makes me feel at ease, knowing that someone's reading at least a few words of what I wrote.

Although it is possible to favourite other people's articles and discussions it did not seem to be possible to favourite your own contributions because of the moderation process. Storm described trying to search for her own posts to see if anyone had responded. Although she, and other interviewees, were philosophical about not getting responses, and were sympathetic to Kooth staff, it is easy to imagine that in some cases a lack of response, or poor response to sharing your feelings via a discussion, could have negative consequences.

Lyra said she found the discussions 'difficult', despite also benefiting from them:

> I really like to find other people's discussions even though it's hard to find long ones. Because I'm socially awkward I guess I don't really interact a lot, but seeing other people's reactions, it really helps a lot. I type in my interests or worries, to be honest, my specific interests or worries are not always there, someone may have started something, but no one's replied to it. So I look for more general things. It helps me because I understand that people feel that way too. Discussions are more about people's lives. There's a lot of people who want to help for example they say, here's my experience, if you've felt this tell me what you think. I don't always relate to some of it.

However other users were very positive about the range of subjects covered in discussions. Hugo and Mateo both specifically mentioned finding that many questions they had were already answered for them on Kooth and Storm said:

> There's a really good range of advice for literally anything, the things that people put on there, there's not always comments straight away but if you go to later ones the advice on there is really amazing people are taking a lot of time to write really long answers, it's really cool, it's a community… if someone writes what they're going through it will always be related to something else someone is going through.

Lyra, however felt that there were too many new discussions, and had a suggested solution:

> A lot of people seem to start discussions, more than want to finish them. it would be good if when you start typing, it links you to existing discussions. When you want to talk to someone about your feelings and you don't get replies, it's a bummer, I guess. One of mine didn't get replies.

We discussed how if there was instead an attempt to link Kooth users to existing discussions on similar topics, longer discussions could develop, rather than having a large number of discussions started which do not receive replies.

Lyra felt that the discussions were most useful for people who had problems with bullying, or with family and friends; parents divorcing; abusive parents. She felt there was good coverage of these issues but for more specific subjects it could be hard to find a relevant discussion.

Like Hugo above, several interviewees referred to seeing that others were having worse problems than them and that some content could be upsetting. Hugo appreciated being able to filter out the more 'distressing' content, such as self-harm and abusive parents.

#### A kind place

Some of the difficulties referred to above are related to the volume of messages that are shared on Kooth, and difficulties keeping the moderation up to date. This moderation may well be essential to making Kooth the beneficial place that respondents report it to be. Carla commented:

> No one's been negative, it's all really positive

While Mateo observed that 'everyone cares about each other'.

There was a general feeling of Kooth as a safe space, with several interviewees specifically using this phrase, a place where you could find positivity and hope.

### 3.11.8 Effects outside Kooth

Interviewees were asked about how their experiences on Kooth affected their lives outside Kooth. It has already been discussed above how advice from Kooth was often passed on to peers outside Kooth. Effects for interviewees included the use of strategies learnt on Kooth, improvements in self-confidence, and effects on relationships.

#### Strategies used outside Kooth

Strategies developed both from the mini-activities, and those suggested by peers in discussions and articles were often used outside Kooth, including breathing exercises in response to anxiety or panic attacks, and music-related activities, such as 'happy' playlists and 'dance like nobody is watching'. Aisha liked to remember some of the things she'd read in poems to think about outside Kooth, and had taken and shared advice such as going to bed at a good time and recommendations for dealing with exam stress.

Nadia:

> I sometimes use the calming strategies [from mini-activities] when I'm really anxious. And some people [in discussions and articles] pass on experiences, they'll suggest

things you can do for calming down like creative writing or patterns with your finger on a desk – that really helps me to calm down.

Mateo mentioned that he would try things that had been suggested, he had taken up cooking from a recommendation on Kooth, and was really proud of himself for that, and as for many interviewees, made use of the breathing techniques:

I always thought that's a weird thing to make people keep quiet if they were too annoying, but it does work!

### Confidence and feeling better in oneself

Several interviewees referred to feeling increased confidence in themselves, as a result of their interactions with Kooth. Lyra felt proud of herself for having posted on a discussion:

Even though I didn't get many replies I felt I'd been brave and I think I've gotten a bit more confident about talking to people online

She also mentioned using Kooth's other options when she was not feeling so confident,

I would like to interact with other people more but I'm quite an awkward person, so I prefer the mini-activities

Mateo felt his main interaction with Kooth was commenting on other people's post and trying to help others. His experiences on Kooth had made him feel much better about himself:

Kooth has pretty much given me a very positive [self-]image, I've been complaining that I don't look nice because I don't have that many friends, maybe, I've been really stressing about that, I know I shouldn't be, but I'm not so afraid anymore; people [other young people on Kooth], have just been so nice and reassuring

When asked further how this change was brought about, Mateo explained that reading other people's posts was very reassuring.

Sometimes it's direct comments on my posts (there was a very nice comment on one post that really made my day) and some other people have been complaining that...they've been having troubles wondering whether body image is important which I don't really think it is, it's more about the personality now… I feel better in myself, I feel more optimistic…

Mateo found that he had become more confident in talking with people outside Kooth.

I've realised that when I talk to my friends, I'm more confident. When I was stressed, I'd mutter, talk very quietly, I didn't really have many conversation topics, I wasn't really interested in very much but now I found myself talking for several minutes or even hours to my friends.

Nadia was feeling more confident in making her own decisions about what she wanted to do, or like. She also felt more confident in dealing with other people in the 'real world'; she felt her exploration of other Kooth users' experiences helped her to ignore negative feedback.

### Relationships

Crucially, for Nadia, Kooth had helped her feel that, because there were people like her on Kooth, she had gained hope that she might be able to meet people she could relate to outside Kooth:

It makes me feel more confident that I can find people in real life that I will get on with, so it makes me make a bit more of an effort, like with social skills, even though I'm nervous on the inside, I force myself to do it because you never know. It makes me feel more confident and to not need validation so, say, if I wanted to start learning a new

> language, I won't feel like just because my friends don't think it's a good idea, doesn't mean I shouldn't do it.

When asked further how Kooth helped bring this about she said more about what she'd learnt from Kooth users' recommendations for listening to the lyrics of songs of the band she liked:

> Where I live it's not really popular and you get made fun of if you like a certain type of music. Where I live in N London, it's like mostly ethnic minorities, and I'm an ethnic minority myself, but I'm not the same as them, and it makes me stick out in a negative way to them. So, when they found out I like a Korean band they were like, no, you live in a postcode, that is like gang culture, you need to listen to this type of music. I don't like it, it's really intimidating to me…I've learnt to block their voices out, and not listen to their opinions and not take it to heart.

Storm considered there could be direct effects on interactions outside Kooth, and Storm knew people at school who also used Kooth:

> Especially if they use Kooth themselves, just having a genuine conversation with someone, if you're trying to help someone and you want to have a reasonable conversation, I think it does have a better outcome if you've used Kooth recently before that conversation, because it will give you an insight on what you might do instead of what you might normally do in a way?

When asked whether this meant being more empathetic Storm said, "yes exactly".

Experiences on Kooth had encouraged Hugo to speak to his parents about what he was experiencing, and this had been very beneficial:

> Definitely the importance of speaking to your parents, a lot of the messages I remember reading, people, like I was, really struggling to tell their parents, but as soon as they did it was like 'a weight off my shoulders', and that was definitely true, so like realizing that other people my age has been to their parents about it, and now they [my parents] are a lot more aware.

**Kooth as a first step to professional help, a useful introduction to support**

Hugo had been referred to school counselling but was unable to express how he felt until he found a Kooth post expressing the same feelings. He took a screenshot of the post to his counselling session showing the counsellor and saying: this is how I feel, this bit yes, this bit no.

Hugo particularly recommended Kooth for those with good lives who do not understand what is happening to them. He described the many barriers to getting help, the limits on how much one can use the school counsellor, the need to speak to parents before seeking more intensive support, the cost of private counselling, and waiting lists for public services. He described Kooth as a good in-between point, and a good starting point:

> It shows you the words to use, how to express the problem. It is a springboard to other help.

### 3.11.9 Counselling

Some of the interviewees valued the provision of counselling on Kooth, while others felt the barriers to using the counselling were too high. Access to counselling on Kooth is heavily rationed in two ways, users are only permitted one counselling session per week, and there is no facility to book, so there are lengthy waits to be seen. Hugo knew in advance about the long waits as his head of year had told him that it was a way to see how much he needed it!

> Personally, I think the biggest downside of [Kooth] was I never ended up using their chat function, because I was always scared that what happens if I needed more tomorrow but I've used it today

Since Hugo found the peer support on Kooth so helpful it is always possible that it wasn't such a downside; Hugo was in a much better place by the time of the interview, as well having accessed professional 'real world' counselling. Adam however felt that one-to-one professional help was what he most sought from Kooth, and the rationing and waiting lists made the site unhelpful for him. Waiting time was the main comment on counselling for those who had used it, although three were positive about the actual counselling and Storm noted the value of speaking with someone who knew none of the personal history, and suggesting the introduction of more interactive on-site activities that one could do while waiting to be seen. Others specifically said that they found the peer components of Kooth more helpful.

### 3.11.10 Conclusions and suggestions from the interviews

The interview analysis shows that users can benefit greatly even if they are not active contributors on Kooth. We also saw that Kooth users can pass on benefit to peers who are not Kooth users, and that support given within Kooth may not have been fully represented by the survey responses, as comments to peers were not always considered to be support. The analysis suggests that users experience important benefits from interacting with the peer support components of Kooth. They go on Kooth as a strategy to support themselves, for calming or distracting themselves, they benefit from the details other users share about their lives, the advice and experiences shared, and just from knowing that there are other people who are feeling the same way or have similar interests. Experiences on Kooth are perceived as leading to benefits that are carried into interviewees daily lives, including impacts on their self-confidence, their relationships, and in having strategies to hand for dealing with life's difficulties and anxieties. Kooth is experienced as a kind place, but there are drawbacks and suggestions for improvements.

These include suggestions for organising discussions so that there are fewer unanswered topics, and discussions can build up more, for example, flagging to users that a similar topic exists which they could contribute to instead of starting a new one; being able to flag your own posts, or find them in another way, and being able to see when people have looked at your posts. Waits for counselling could be frustrating and one interviewee suggested that if Kooth could not provide quicker access to counselling, users could be linked to other sites, while another suggested having something interactive to do while waiting for the chat, perhaps creative or therapeutic but within Kooth.

# 4 ECONOMIC CASE FOR KOOTH

This section links together the available evidence in terms of costs and differential outcomes in order to ascertain whether the Kooth intervention can be considered to represent "value for money", adopting an analytical framework of costs and consequences.

Questions like, how does Kooth use relate to use of other services? Does it replace other services? Does it encourage people to access needed services? Does it meet a need which would not otherwise be met and would otherwise lead to bigger costs in the longer term? Although we cannot definitively answer these questions without a control group, we can examine what our evidence suggests in relation to these questions. This includes presenting the costs and consequences of Kooth to give indications of potential cost effectiveness, including an estimation of the 'total cost of Kooth' during one month, which we set against any benefits experienced by study participants.

## METHODS AND RESULTS

Available economic and usage data of Kooth include the following:

A The revenue figure apportioned for community support in November 2020 was equal to £104,794.7

B The number of unique users logging in Kooth in November 2020 was equal to 23,751

For this analysis, we used revenue figures as an approximation for the rolling costs of Kooth during the month of November 2020. Costs are not thought to be associated with the number of logins or activity on Kooth (with the exception of counselling services). Thus,

Table 34 summarises the average cost per user (not including fixed costs) which was found to be around £4.4. This figure has been obtained by computing the ratio A/B (revenue/number of unique users). Under the assumption that the outcome gains obtained within the sample would be equally distributed across all Kooth users, we compare the average cost per user against the differential outcomes.

Whilst all outcomes have shown an improvement, only YP-CORE, SIDAS and HOPE have proven to be significant at 95% confidence level.

In order to understand whether the programme represents good "value for money", we calculate the ratio between costs and differential outcomes, showing what is the cost needed to improve by 1-point for each outcome.

We observe that KIDSCREEN-10 seems to be the most "costly" outcome (about £70 per 1-point improvement), whilst YP-CORE is the one showing the lowest "Cost per unit of outcome" ratio. This is to be expected given that the primary aim of the Kooth programme is focused on the YP-CORE mental health outcome rather than improving quality of life more generally (as measured by the KIDSCREEN-10). However, it is difficult to compare these figures without being able to link this directly to clinically meaningful outcome variation, which could suggest different "value for money" considerations.

TABLE 34: AVERAGE COSTS AND DIFFERENTIAL OUTCOMES FOR THE KOOTH SAMPLE

| Cost | Mean (£) | | | |
|---|---|---|---|---|
| Cost per unique user (Nov 2020) | 4.41 | | | |
| **Outcome (FU-BL)** | **Mean** | **Min** | **Max** | **Cost per unit change in outcome** |
| PAS | -0.24 | -16 | 10 | -18.25 |
| SDQ | -0.34 | -23 | 18 | -12.81 |
| YP-CORE | -3.02 | -28 | 10 | -1.46 |
| SIDAS | -1.46 | -28 | 30 | -3.02 |
| KIDSCREEN-10 | 0.06 | -5 | 8 | 70.13 |
| HOPE | 1.46 | -28 | 19 | 3.01 |
| Note: Total number of observations is 302, apart from YP-CORE, for which is 258. | | | | |

TABLE 35 AVERAGE COSTS AND DIFFERENTIAL OUTCOMES FOR THE KOOTH SAMPLE BY PATHWAY

| Cost | Mean (£) | | | |
|---|---|---|---|---|
| Cost per unique user (Nov 2020) | 4.41 | | | |
| **Outcome (FU-BL)** | **Mean** | **Min** | **Max** | **Cost per unit change in outcome** |
| **PATHWAY 1: Peer support (n=100)** | | | | |
| PAS | -0.33 | -9 | 10 | 13.37 |
| SDQ | -0.33 | -13 | 9 | 13.37 |
| YP-CORE | -2.93 | -19 | 6 | 1.51 |
| SIDAS | -1.82 | -24 | 30 | 2.42 |
| KIDSCREEN-10 | 0.06 | -4 | 4 | 73.54 |
| HOPE | 1.82 | -15 | 13 | 2.42 |
| **PATHWAY 2: Self-directed, no synchronous chat and no peer support interaction (n=88)** | | | | |
| PAS | -0.40 | -16 | 5 | 11.09 |
| SDQ | -0.60 | -12 | 18 | 7.33 |
| YP-CORE | -2.84 | -23 | 8 | 1.55 |
| SIDAS | -1.88 | -28 | 20 | 2.35 |
| KIDSCREEN-10 | 0.11 | -2 | 3 | 38.83 |
| HOPE | 1.07 | -9 | 13 | 4.13 |
| **PATHWAY 3: Direct therapeutic engagement (n=76)** | | | | |
| PAS | -0.08 | -6 | 7 | 55.89 |
| SDQ | -0.08 | -23 | 15 | 55.89 |
| YP-CORE | -2.96 | -28 | 10 | 1.49 |
| SIDAS | 0.03 | -22 | 22 | 167.66 |
| KIDSCREEN-10 | -0.26 | -5 | 3 | 16.77 |
| HOPE | 1.68 | -6 | 19 | 2.62 |

Table 36 presents a selection of interventions targeting adolescents' mental health, with a comparison of costs standardised to the duration of one month (in line with Kooth's duration). The findings related to intervention outcomes were identified through a series of literature reviews and academic papers (Schmidt et al, 2020; Mulfinger et al., 2017; Khanh-Dao Le et al., 2019). Looking at the average cost per participant per one month (expressed in £2020), we can see that Kooth's average cost is in line with other similar interventions, placing itself in the middle of the distribution. Some of the interventions in the list, however, produced only small significant effects. Therefore, from an economic point of view based on this comparison, we can say that the Kooth intervention can be considered to be good "value for money" when used to target those outcomes that were found to be significant (YP-CORE, SIDAS, HOPE). From a broader healthcare perspective and to contextualise the Kooth results, we think it is worth mentioning that the average annual costs associated with mental health service use for young people aged 5–15 are £1,521 per person when inflated to 2020 levels (Snell et al., 2013).

Whilst it is difficult to produce a definite assessment on whether Kooth is "value for money", the low cost per user seems to go in this direction. Our findings suggest that Kooth also plays a potentially preventative role, which can help reduce service use or can lead to a more efficient use of other services (for example, as was also noted in tables 15 and 16). These hypotheses would need further investigation. It could also be hypothesised that additional funds could make Kooth even more valuable, for example, by speeding up moderation to improve discussion experiences, and reducing waiting times for counselling.

TABLE 36: COST COMPARISON ACROSS A SERIES OF DIFFERENT INTERVENTIONS TARGETING YOUNGER PEOPLE'S MENTAL HEALTH

| Programme/ intervention | Target | Cost of delivering intervention per month | Number of users/ programme reach | Average cost per participant per month | Average cost per participant | Time horizon (years) | Potential mental health benefits of average user | Study |
|---|---|---|---|---|---|---|---|---|
| Kooth | Emotional and MH support for children and adolescents | £104,795 | 23,751 | £4.4 | £4.4 | 0.08 | YP-CORE, SIDAS, HOPE | – |
| HOP | Stigma and disclosure of mental illness in adolescents | £9,015 | 49 | £184.0 | £138.0 | 0.06 | Stigma, Disclosure and QoL | Mulfinger et al., 2017 |
| KIVA | School bullying prevention | £216 | 75 | £2.9 | £310.9 | 9.00 | Gain in bullying-free years | Persson et al., 2018 |
| ABC | Parental competence, children's positive development | £30,852 | 621 | £49.7 | £298.1 | 0.50 | Improving child well-being, QALYs | Ulfsdotter et al., 2015 |
| DISA | Targeting depression in adolescents | £14,980 | 948 | £15.8 | £189.6 | 1.00 | Self-reported depressive symptoms and self-rated health | Garmy et al., 2019 |
| OBPP | Bullying prevention programme | £1,034 | 300 | £3.4 | £124.0 | 3.00 | Reduction in bullying victims | Beckman & Svensson, 2015 |
| FRIENDS | Targeting anxiety | £15,942 | 1,362 | £11.7 | £70.2 | 0.50 | Reduction in RCADS | Stallard et al., 2015 |
| RAP | Targeting depression in adolescents | £13,699 | 3,357 | £4.1 | £49.0 | 1.00 | No significant effect | Anderson et al., 2014 |
| PATHS | Promoting social and emotional well-being | £7,025 | 5,218 | £1.3 | £32.3 | 2.00 | Children's social skills, perceptions of peers, and psychological well-being | Humphrey et al., 2018 |
| YAM | Suicide prevention | £29,541 | 11,110 | £2.7 | £31.9 | 1.00 | Reduction in first-time suicide attempt and suicide ideation | Ahern et al., 2018 |
| Unnamed (CBT) | CBT programmes for depression | £161,953 | 1,558,171 | £0.1 | £12.5 | 10.00 | DALYs reduction | Lee et al., 2017 |
| LINK | Internet intervention to increase help-seeking behaviour for MH | £219 | 205 | £1.1 | £3.2 | 0.25 | QALYs gain | Khanh-Dao Le et al., 2019 |

Note: Monetary values are expressed in £2020.

# 5 FUTURE EVALUATION

For this initial pilot evaluation, we descriptively and statistically compared the difference in participants' outcomes before the intervention and after the intervention (distance travelled or pre-post comparison). In this way, we have a sense of whether Kooth users have seen an improvement in their mental health and other secondary outcomes over time. These results can be used to inform a future impact evaluation analysis such as a randomised controlled trial.

We initially discussed the possibility of performing a randomised controlled trial with Kooth colleagues for the current evaluation; but, given an initial pilot evaluation seemed sensible to begin with in order to better understand the programme effects in relation to specific outcomes and effect sizes. There are design issues to consider for a future Randomised Controlled Trial (RCT) as it is not, at present, possible to isolate the peer support component of Kooth from the whole package. Pilot evaluation data collected from this pre/post study has provided an important initial evaluation step to inform feasibility and effectiveness of the intervention and evaluation strategies. The approach taken here can inform understanding of the effects of the intervention and associated pathways and potentially refine outcome measures or intervention components. The data collected on outcome indicators and the views and experiences of those exposed to Kooth's peer support could inform decisions about the best timeframe for collecting evaluation data, in addition to uptake, engagement, acceptability and appropriateness of intervention and evaluation (e.g. recruitment) components.

In the future, more robust impact evaluations (e.g. an RCT) could allow us to more precisely estimate whether changes in the mental health outcomes of those participating in Kooth can be attributed to the intervention (i.e. Kooth as a whole) (by comparing outcomes of young individuals invited to take part in the intervention against those not invited to take part, or offered a comparator intervention (the counterfactual). This could build on the current pilot evaluation which aims to understand the benefits of the intervention based on a pre-post exposure comparison which could set the basis for a potential RCT design in the future. Another option would be to assess any longer-term effects of Kooth's peer support Programme by comparing the longer-term outcomes of young people who took part in the Kooth Programme against the longer-term outcomes of similar cohort of young people not taking part in the Kooth Programme. This approach, referred to as counterfactual analysis, involves the creation of a comparison group (using matching techniques), to compare what actually happened as a result of a programme with what would have happened in its absence.

If Kooth wish to investigate the impact of their discussion boards in comparison with a control group, they could consider whether it is possible to create two experimental conditions within Kooth. Visitors to the Kooth site who volunteer to take part in a trial could be randomised to either 1) a version of Kooth with only the counselling offer, but no access to discussion boards or other peer-support materials or 2) the full version of Kooth. Thus, with a sufficiently large sample, it would be possible to assess the additional impact of Kooth's discussion boards and associated materials in comparison with Kooth counselling only.

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