



Pregnant then blue? The value of MumsAid counselling for new and expectant mothers

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Pro Bono Economics uses economics to empower the social sector and to increase wellbeing across the UK. We combine project work for individual charities and social enterprises with policy research that can drive systemic change. Working with 400 volunteer economists, we have supported over 500 charities since our inception in 2009.



MumsAid is an award-winning charity dedicated to supporting pregnant women and new mothers facing maternal mental health challenges. Since our launch, we have provided specialist counselling and therapeutic services to over 5,000 women, offering individualised care to help them navigate the critical perinatal period. Our vision is of a society where every mother is empowered to give her baby the best start in life through accessible and compassionate maternal mental health resources.



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Summary

The earliest years of a child's life are a critical and often challenging time. While mothers need to adapt to many changes and develop additional skills, their own mental health can be overlooked. It is common for mothers to experience mental health issues: up to 1 in 5 new and expectant mothers experience depression.

The scale of the problem is concerning; even more concerning is that many of these mothers are not getting the help they need from an ailing healthcare system. Research suggests that up to half of women with postnatal depression are not necessarily recognised as depressed by their primary health care team, with women from minority ethnic backgrounds more likely to be missed. If they are referred, wait lists for talking therapy are long, and the standard offering may not be tailored to mothers of children with special needs or from certain backgrounds. The pressure on the system shows no sign of easing, with huge numbers of mothers not receiving the support they need for mental health problems.

The impact on mothers, children and society of not addressing depression at this critical time is far-reaching. Left untreated, perinatal depression can persist for many years, diminishing a mother's quality of life for that period, and/or recurring after births of subsequent children. The effects on children can last even longer: research shows a connection between mothers' experience of perinatal depression and developmental and emotional problems in children persisting throughout their school years and beyond. In the face of these potential impacts, it is surely imperative that no mother is left to suffer alone.

MumsAid is one charity which supports mothers who have few other places to turn. MumsAid's work has already been shown to be effective at pulling mothers out of depression. An independent evaluation in 2020 showed that, in general, mothers who had been through counselling provided by MumsAid significantly improved on standard measures of depression, as well as on measures related to their confidence, stress and bond with their baby. However, the benefits of providing this service have not been expressed in monetary terms until now.

This report shows that, even taking a very conservative estimate of the benefits of this change in mothers' mental health, the economic value of

this improved quality of life is over £10,000 per mother supported by MumsAid counselling. While the improvement cannot be credibly attributed wholly to MumsAid's counselling due to evidence gaps, this report makes clear that the programme is likely to deliver value for money. The mental health recovery of only 1 in 7 mothers needs to have occurred as a result of MumsAid's counselling programme for the economic benefits to outweigh the costs.

Moreover, the benefits quantified only reflect the value of the improvement in the mother's quality of life as a result of recovering from depression. Due to evidence gaps, this report does not present the value of the many other benefits of this service, such as those that may arise through marginal changes in mental health, or through indirect impacts on other outcomes for both mother and baby. It is hoped that further work can quantify some of these other important benefits to mothers and children.

The results of the analysis in this report are necessarily cautiously expressed, but nonetheless paint a compelling picture of a successful and important programme. By helping mothers who might otherwise not receive the assistance they need, MumsAid's counselling programme plays a critical role in supporting mothers and children, with benefits which are likely to spread wider and endure far longer than is shown in this report. At a time when depression and other mental health issues are a too-common challenge for mothers in the UK, policymakers should look to successful programmes like this to help shape future plans for support.

1 in 5

mothers experience
depression while pregnant or
during the first year of their
child's life

76%

of MumsAid's clients
experience an
improvement in their
mental health

1 in 3

of MumsAid's clients
make a sustained
recovery from
depression

The benefits of recovering from
depression amount to over

£10,000

per mother who works with
MumsAid

Introduction

Up to 1 in 5 new and expectant mothers experience depression.¹ This is a critical time for a child's development and for bonding between mother and child; emotional disruption at this time can have far-reaching consequences.

Mothers with depression may experience feelings of sadness, loss of interest in normal activities and difficulty sleeping and concentrating.² Left untreated, perinatal depression (PND) can persist for many years, and may recur after births of subsequent children.³ As a result, a mother's quality of life may be diminished for many years, and her prospects of entering or returning to work may also be affected.⁴

The impact of depression on the bond between mother and child, and thus the child's development, is also critically important. Research has shown that if a mother experiences perinatal or postnatal depression, children have a higher risk of emotional, behavioural, or cognitive problems; are more likely to have special educational needs;⁵ and are less likely to achieve a 'pass' grade in maths at age 16.⁶ Children of mothers with persistent depression have lower maths scores at age 16 and a higher risk of experiencing depression themselves at 18.⁷ Such impacts do not, of course, stop at school: they are likely to follow these children through life.

¹ The National Institute for Health and Care Excellence (NICE), [Depression - antenatal and postnatal: How common is it?](#) Version: 11/2023. Accessed 14 November 2024.

² World Health Organisation (2020), [WHO methods and data sources for global burden of disease estimates 2000-2019](#), Global Health Estimates Technical Paper WHO/DDI/DNA/GHE/2020.3: Annex Table C

³ Symptoms may persist until children go to school in 40% of women. (S McCue Horwitz et al. , [Persistence of Maternal Depressive Symptoms throughout the Early Years of Childhood](#), *Journal of Women's Health* 18 (5), 2009; other studies have found evidence of PND persisting for up to 11 years: E Netsi et al. , [Association of Persistent and Severe Postnatal Depression With Child Outcomes](#), *JAMA Psychiatry* 75 (3): 247–253, 2018; MK Mughal et al. , [Trajectories of maternal depressive symptoms from pregnancy to 11 years postpartum: Findings from Avon Longitudinal Study of Parents and Children \(ALSPAC\) cohort](#), *Journal of Affective Disorders* 328: 191-199, 2023.

⁴ Academic evidence on the relationship between perinatal depression and employment is mixed, because while depression may cause a mother to delay her return to work, it could also be the case that the absence of work causes or prolongs depression.

⁵ A Bauer et al., [Perinatal depression and child development: exploring the economic consequences from a South London cohort](#), *Psychological Medicine* 45 (1): 51-61, 2015.

⁶ R Pearson et al., [Maternal perinatal mental health and offspring academic achievement at age 16: the mediating role of childhood executive function](#), *Journal of Child Psychology and Psychiatry* 57 (4): 491-501, 2016.

⁷ Netsi et al (2018).

Despite the effect depression can have at this crucial time of life, many mothers find it hard to access statutory services that make a difference. Research has long established that as many as half of mothers experiencing PND may not have their depression detected by their GP⁸; white women are more likely to have their symptoms recognised than women from minority ethnic backgrounds.⁹

Even if referred to care available through the NHS, many women fall through the gaps in service provision. Between August 2022 and March 2023, a 40% increase in demand for perinatal mental health services was met with only an 8% increase in the number of mothers accessing services.¹⁰ More recent figures have suggested that over 10,000 women a year do not receive the support they need.¹¹ The stakes are high: research has shown that better integrating mental health check-ins with perinatal services could lead to a £44 million improvement in families' quality of life per year.¹²

Many new mothers are falling through gaps in healthcare provision

"...I had moderate depression as diagnosed by my GP but my referral never came through..."

"...I couldn't afford private therapy and the NHS waiting list is very long (I'm still waiting for this to come through)..."

"...the NHS couldn't help me..."

- MumsAid clients

⁸ See for example: G Hearn et al., [Postnatal depression in the community](#), British Journal of General Practice, 48 (428): 1064-6, 1998; S Prady et al., [Evaluation of ethnic disparities in detection of depression and anxiety in primary care during the maternal period: Combined analysis of routine and cohort data](#), British Journal of Psychiatry 208 (5): 453-461, 2016; National Childbirth Trust (2017), [The Hidden Half](#), London: NCB. Accessed 9 November 2024.

⁹ Prady et al. (2016)

¹⁰ A Tubb, [Over 30,000 new or expectant mothers are on waiting lists for mental health support](#), Maternal Mental Health Alliance, September 2023.

¹¹ D Campbell, [Huge delays to access maternal mental health care in England called a scandal](#), The Guardian, December 2023.

¹² A Bauer, M Tinelli, & M Knapp, [The economic case for increasing access to treatment for women with common mental health problems during the perinatal period](#), Care Policy and Evaluation Centre, London School of Economics and Political Science, February 2022. Even this substantial amount does not take into account the long-term effects which perinatal depression can have on, for example, mothers' return to employment, or on outcomes for children.

MumsAid support

Civil society plays an important role in filling these gaps, providing support and social connection through a network of local organisations. MumsAid is one such charity, providing key services for mothers who might otherwise not receive assistance with their own emotional wellbeing.

MumsAid supports pregnant women, new mothers, and their families with specialised perinatal counselling, therapeutic group work and advocacy support. They offer 1:1 counselling for pregnant women and mothers with children up to 2 years old, covering twelve sessions and follow-ups at 3- and 6-months post-counselling. Over 650 mothers have been supported by MumsAid's counselling programme since 2011, including 300 in the last five financial years. MumsAid's other programmes include private counselling services and group work involving creative activities to facilitate bonding among mothers.

MumsAid's support helps mothers where long wait lists or other barriers may mean they cannot access public support. In contrast to NHS Talking Therapy services, MumsAid can actively approach mothers from minority and marginalised communities who may face extra barriers in asking for help. They can also provide bespoke services for young mums and take account of the interplay between day-to-day struggles and mental health problems.

Difficulties post-birth

"I reached out to MumsAid because I believed I was suffering from post-natal depression. I struggled to cope with my son and felt like I was doing a bad job of being a mother. I'd never spoken to a counsellor before and am not used to talking about my feelings (growing up, my family didn't talk about them). I was keen to become a better mum and be able to talk through my emotions so that I was able to better understand why I behaved the way I did, and how I could then manage my reactions better."

- MumsAid client

MumsAid's work has already been shown to be effective. An evaluation by McPin in 2020 showed that, in general, mothers in MumsAid's counselling programme had significant improvements on a standard measure of depression after counselling.¹³ They also showed improvements on measures related to their confidence, stress and bond with their baby. However, it has not previously been shown whether the benefits of providing this service outweigh its costs; that is, whether the service provides value for money. This is a gap that this report seeks to fill.

Scope of this report

This report aims to quantify the potential economic benefits of MumsAid's counselling programme in terms of mothers' likely improved quality of life. These are then compared with the cost of running the programme. Importantly, a fully causal statement, directly comparing benefits and costs, cannot confidently be made with the evidence available at this time.¹⁴ Instead, the focus of this report is a breakeven analysis, which identifies the share of the benefits which would need to be attributable to MumsAid's programme for it to deliver value for money.

This report focuses only on the mother's mental health, which will likely seriously underestimate the impact of PND: as noted above, it can also be consequential for their child. It is hoped that future work will enable quantification of a broader range of benefits of MumsAid's work.

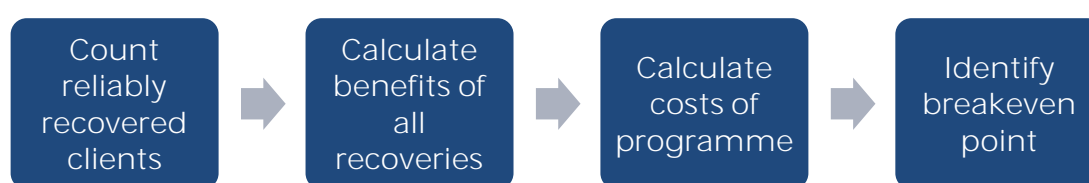
¹³ D Robotham, L Wood & J Parker, [MumsAid evaluation](#), McPin evaluation, January 2020.

¹⁴ This is because there is no comparison group, comparable to MumsAid's clients but having not received counselling, whose outcomes can be compared those of MumsAid mothers. Without this, the possibility that any improvement in depressive symptoms would have happened in the absence of counselling cannot be excluded. Having a comparison group would enable a more confident claim about whether the improved quality of life arises as a direct result of the counselling service.

PBE's approach

PBE conducted a breakeven analysis on information provided by MumsAid about their counselling programme, which includes pre- and post-counselling measures of depression and the programme costs. The calculations follow the process outlined below; full details are given in Annex A.

Figure 1. Using reliable recovery to assess the programme's value for money
Process diagram for analysis



Count reliably recovered clients

MumsAid assess all clients before and after counselling using the Edinburgh Postnatal Depression Scale (EPDS). Mothers are considered to have depression if they score above a threshold for depression on the EPDS. If they score above the threshold before starting counselling, and below it afterwards, they may be described as 'recovered'. To be considered *reliably* recovered, the key measure of recovery used in this report, they must also have made a reliable improvement in their scores, that is, the change in their score is large enough not to have been driven by small day-to-day variations in how people respond to such surveys.¹⁵

Along with other common mental health disorders, depression is prone to relapse.¹⁶ While measures of post-counselling outcomes indicate an improvement for most of MumsAid's clients, an absence of depressive symptoms needs to be sustained for some period of time in order for a recovery to be meaningful, and for the benefits to be quantified along a time dimension. A relapse rate of 30%, taken from academic research on the topic, is applied in this report to the number of MumsAid clients who

¹⁵ The sensitivity of the results in this report to the threshold and minimum change chosen are shown in a later section.

¹⁶ J Vittengl et al., [Reducing relapse and recurrence in unipolar depression: A comparative meta-analysis of cognitive-behavioral therapy's effects](#), *Journal of Consulting and Clinical Psychology* 75 (3): 475–488, 2007.

show recovery over their counselling sessions, to account for those who are likely not to remain depression-free.¹⁷

Calculate benefits of all recoveries

Two key quantifications of the success of MumsAid's intervention are considered: the effect of the alleviation from depression in terms of quality-adjusted life years (QALYs), used by the Treasury to represent the health benefits in terms of improvement in quality of life from an intervention, and its monetary equivalent.¹⁸ In this report, the QALY-equivalent effect of a moderate depressive disorder published by the WHO is chosen as a representative measure of the impact of PND on MumsAid's clients' quality of life.¹⁹

This QALY amount is assigned to each of MumsAid's reliably recovered clients, after removing a share likely to have relapsed. This represents the quality-of-life improvement of a year free from depression following counselling, where the client would otherwise have been expected to suffer depression for that time.

Calculate costs of programme

Data on the costs of the counselling programme provided by MumsAid cover five financial years, 2019-20 to 2023-24. Salary costs make up the vast majority of the total cost, although the contribution of the programme to MumsAid's core costs is also non-negligible.

Identify breakeven point

The final step of the analysis is to identify the point at which the calculated benefits start to outweigh the programme's costs. This concept is expressed in this report as the 'breakeven point'. It reflects what share of the improvement in client outcomes would need to have been caused by MumsAid counselling in order for the benefits to outweigh the costs. Equivalently, it could be understood as the level of confidence one would

¹⁷ A meta-analysis of 28 studies found that an average of 29% of participants relapsed into depression within a year of ending cognitive-behavioural therapy: Vittengl et al (2007).

¹⁸ Treasury standards value one QALY at £70,000 in 2020/21 prices; this value has been updated to 2023/24 prices using the GDP deflator data and forecasts produced by Treasury.

¹⁹ World Health Organisation (2020).

need to have that the benefits calculated are attributable to MumsAid's counselling, in order to state that the programme delivers value for money.

If one believes the counselling programme is causing the improvement with a probability higher than the breakeven point, it follows that the benefits of the programme would outweigh its costs. If even only a relatively small proportion of the benefits would need to be attributed to MumsAid counselling, then it helps to make the case that the programme is likely to be delivering good value for money.

Key limitations of economic analysis

In undertaking this analysis there are various points at which the limit of what can be known or shown with data are reached. The choices or assumptions made at such points could critically affect the resulting estimates of the potential benefits of this treatment. The most important choices which have been made are:

- The choice of threshold between depressed and not depressed in EPDS scores;
- The choice of the minimum change required to be considered reliably improved or recovered;
- The imposition of relapse rates from academic research;
- The choice of time horizon.

The sensitivity tests explored later in this report show that making different choices in the first three areas lead to different overall estimates, although these do not substantively change the broad conclusions of the analysis.

A sensitivity test on time horizons is not included; nonetheless it is an important point to note. This report quantifies improvement in quality of life from a year without depression, beginning at the end of the twelve sessions provided by MumsAid. This may be seen as a conservative estimate of the impact of counselling, given that PND can persist for many years in some mothers; however, this must be balanced by the acknowledgment that, even in the absence of counselling, PND may not last a year in others. It is hoped that, with further research, it may be possible to find an appropriate comparison group to be more precise about the likely persistence of depression in MumsAid mothers with or without counselling.

As noted earlier, another key limitation of the analysis is that, without a comparison group, the improvement cannot be confidently attributed to MumsAid's counselling, and thus this report does not constitute a full cost-benefit analysis.

Results of the Analysis

Substantial improvements are observable in the 300 MumsAid clients who have participated in the counselling programme over the most recent 5 financial years. First, 167 mothers (56%) recovered from depression between the start and end of their counselling: that is, their EPDS scores indicated that they had clinical levels of depression before starting counselling and did not afterwards.

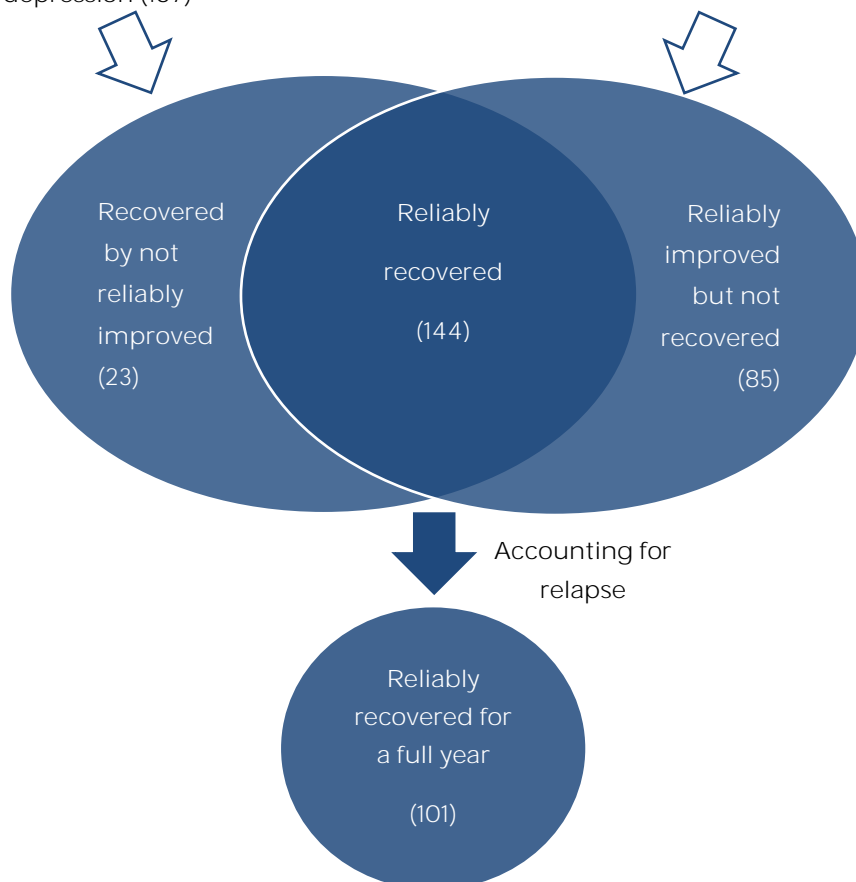
Another measure of the success of the programme is in the change in EPDS scores. 229 mothers (76%) showed a significant improvement in their measured depression ('reliable improvement', in terms used by the NHS). The downward change in their EPDS scores was large enough to not have been caused by random variation, regardless of whether the change took them across the threshold for depression.

Figure 2. Clients must be both recovered and reliably improved to count towards quantified benefits

Criteria for counting reliable and lasting recoveries

Mums recovering from depression (167)

Mums reliably improving (229)



Reliable recovery requires both of the above to be true: a mother's score must cross the clinical threshold and also change substantially. 144 of MumsAid's clients (48%) reliably recovered over the course of their counselling programme. Out of these, 101 mothers (34%) are expected to have remained recovered for a full year, after accounting for likely levels of relapse.

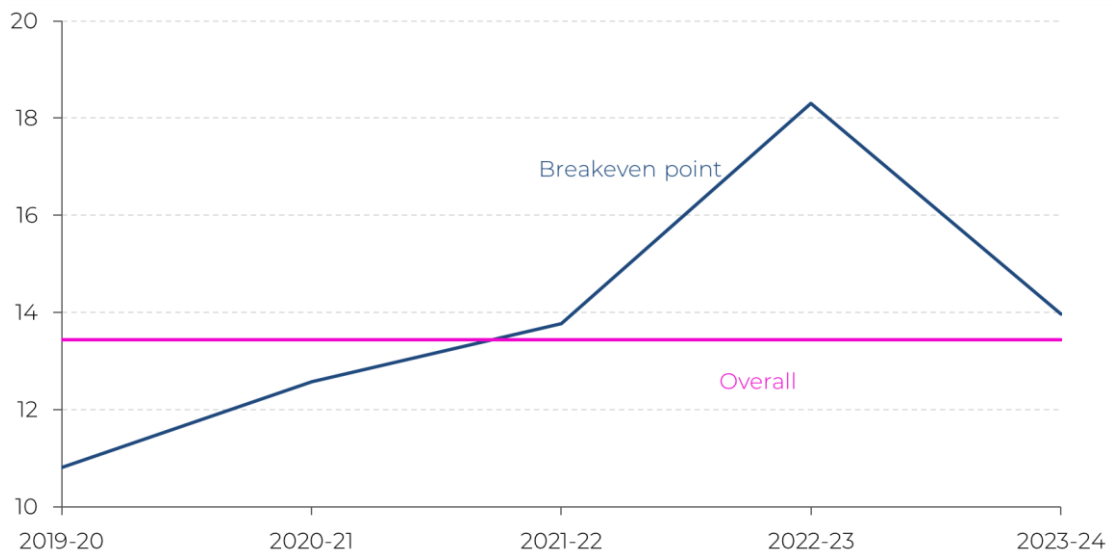
The benefits of the observed improvements in mental health are substantial. Mothers who reliably recover experience an improvement in their quality of life, estimated to have a value of over £31,000 for each of them. If all of the improvement could be attributed to MumsAid's counselling, it would mean the programme is worth over £31,000 per client who recovers from depression. Across all of MumsAid's clients, taking into account that not all clients are likely to experience reliable recovery over a year, the average expected benefit still amounts to over £10,500 per person.

Scaled up over the cohort, the total benefits from the QALYs saved by these clients' recovery is over £3 million. In comparison, the monetisable costs of the programme over that time amount to around £420,000.

In terms of whether the programme provides value for money, the breakeven point is low. Only 13% of the estimated recoveries need to have been caused by MumsAid's counselling programme before the benefits of those recoveries outweigh the costs. That is to say, the programme breaks even if at least 1 in 7 of the observed recoveries have taken place due to MumsAid's support and would not have happened otherwise.

The benefits quantified above are very conservative. As noted earlier, PND can have far-reaching and long-lasting effects on the mother's quality of life and her bond with her child, and the child's development. The benefits quantified here only reflect the improvement in the mother's quality of life, and only represent a year of such improvement. It would be easy to argue that these, therefore, substantially underestimate the true benefits of the improvement in mothers' mental health.

Figure 3. The estimated breakeven point is relatively stable across years
Breakeven point in each financial year, and overall



Note: Breakeven point shows the ratio between quantified benefits of client recovery and costs of the MumsAid counselling programme. 'All years' line is an average of yearly breakeven points, weighted by the number of clients taking part in MumsAid counselling in each financial year.
Sources: PBE analysis of data provided by MumsAid and HM Treasury (2022 & 2024), Vittengl et al. (2007), and WHO (2020).

This analysis covers all clients over the five financial years from 2019-20 to 2023-24. It is possible to repeat the same analysis for each financial year. Figure 3 shows that the estimated breakeven point is relatively stable over time, varying from 11% to 18%. Full results by financial year are presented in Annex A.

Having a point of comparison can provide useful perspective on MumsAid clients' outcomes. The most natural comparison is the NHS Talking Therapies (previously known as IAPT). 38% of people referred to Talking Therapies went on to access and finish their course of treatment in 2022-23. According to their scores (on a different measure of depression) 50% of those who finished showed recovery, 67% showed reliable improvement, and 47% showed reliable recovery.²⁰

While the services provided by MumsAid mirrors that available under the more intensive Talking Therapy offering it is worth noting that these figures may not be directly comparable to those from MumsAid. First, under NHS Talking Therapy, a lower-intensity self-guided learning programme is also a treatment option, which is included in the above figures. It is possible that

²⁰ NHS, [NHS Talking Therapies, for anxiety and depression, Annual reports, 2022-23](#), last modified 26 September 2024, accessed 14 November 2024.

this lower-intensity option has different completion and effectiveness outcomes.²¹ In addition, MumsAid invests heavily in reaching out to and retaining clients for the full duration of their counselling programme, a strength of their service which is not likely to be replicated in public provision.

²¹ See Table A2 for an indication along these lines from various studies.

Sensitivity Analysis

The estimates above are sensitive to the choices outlined earlier in this report. This is demonstrated below with some sensitivity tests, which explore how the estimates change under a range of different assumptions:

- Sensitivity Test 1 – variations in the choice of EPDS threshold
- Sensitivity Test 2 – variations in minimum change
- Sensitivity Test 3 – excluding pregnant clients.

Sensitivity Test 1 – variations in the choice of EPDS threshold

There is no strong consensus in the academic literature on the appropriate threshold in the EPDS scale which would indicate the respondent is likely to be clinically depressed. The base case estimates presented above use a threshold of 11, based on a meta-analysis of several studies showing this to be the threshold which most precisely distinguished clinical levels of depression, but academic research has used a wide range of thresholds.²²

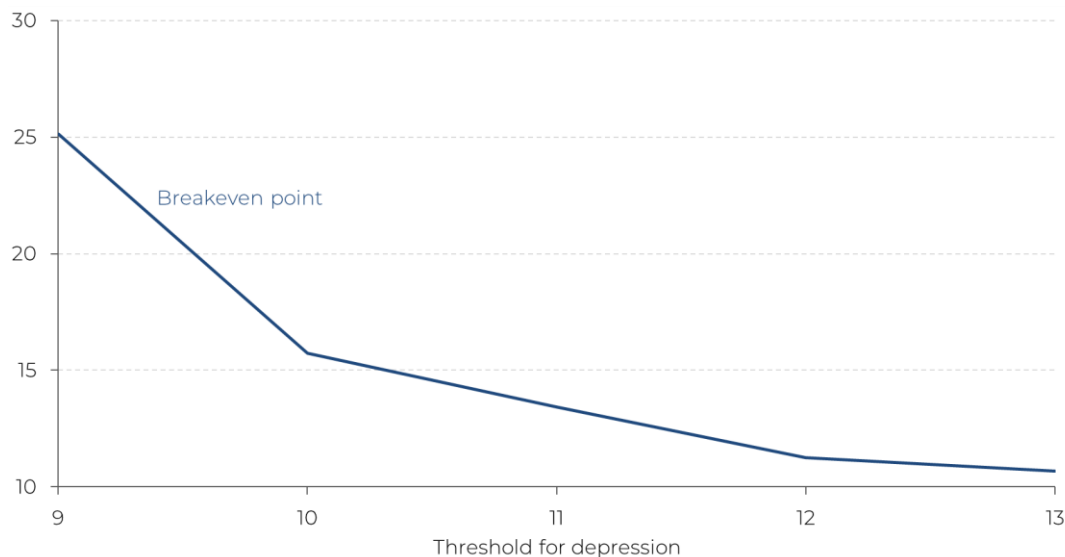
In order to be confident that the choice of threshold is not driving the results reported in the base case scenario, Figure 4 shows the breakeven points which would apply under various other possible thresholds.

Figure 4 shows that the approach taken by PBE's analysis is on the conservative side: other justifiable choices mean more clients are identified as recovering, and thus higher estimated benefits and lower breakeven points. In other words, with different choices, the benefits which could be attributable to MumsAid's programme would appear to even further outweigh the costs compared to the base case estimates.

²² B Levis et al., [Accuracy of the Edinburgh Postnatal Depression Scale \(EPDS\) for screening to detect major depression among pregnant and postpartum women: systematic review and meta-analysis of individual participant data](#), *BMJ*, 371 m4022, 2020.

Figure 4. In other scenarios, up to 1 in 4 reliable recoveries have to be attributable to MumsAid for the benefits to outweigh the costs

Breakeven point under other clinical thresholds



Note: Breakeven point shows the ratio between quantified benefits of client recovery and costs of the MumsAid counselling programme.

Sources: PBE analysis of data provided by MumsAid and HM Treasury (2022 & 2024), Vittengl et al (2007) and WHO (2020).

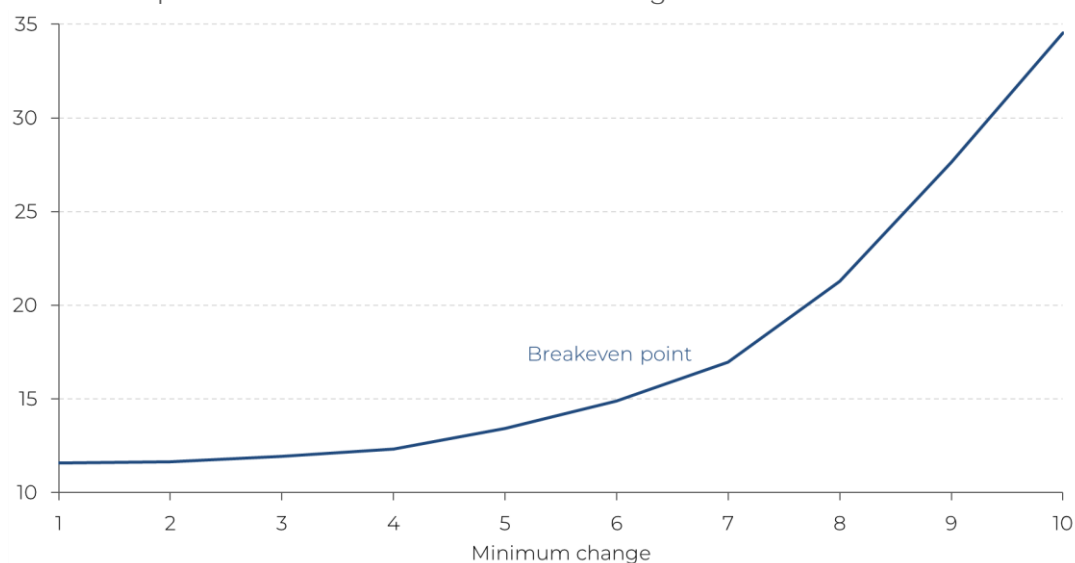
Sensitivity Test 2 – variations in minimum change

Some survey tools used in mental health settings have a clinical standard minimum change which indicates a reliable recovery. To be considered 'recovered' from a condition, a patient must pass the relevant threshold (in this case, 11), and their score must also have changed by a large enough amount for it to be considered a 'reliable' improvement. This prevents results from being driven by day-to-day random variation in how people respond to such survey measures.

A review of the academic literature did not reveal an equivalent concept for the EPDS scale. In the base case results, the standard deviation of the change in EPDS scores (from pre- to post-counselling) is used to proxy for this concept. The higher the chosen minimum change, the lower the number of clients whose scores will have changed by enough to have reliably recovered. This concept is illustrated in Figure 5, which shows how the breakeven point changes under different minimum changes.

Figure 5. The higher the required minimum change, the more conservative the findings

Breakeven point under different minimum changes



Note: Breakeven point shows the ratio between quantified benefits of client recovery and costs of the MumsAid counselling programme. Standard deviation of change in EPDS scores is 4.16; the minimum change in the base case is thus effectively 5 as EPDS scores are integers.

Sources: PBE analysis of data provided by MumsAid and HM Treasury (2022 & 2024), Vittengl et al (2007) and WHO (2020).

A lower choice of minimum change would capture more of MumsAid's clients in the count of recovered clients. It follows that the total benefits would be estimated to be higher. In the case of no minimum change, total benefits would be estimated at around 16% higher than in the base case, implying a breakeven point of 12%. On the other hand, using a higher minimum change (for example, two standard deviations) would imply a much more conservative approach.

Sensitivity Test 3 – excluding pregnant clients

There is some evidence to suggest that pregnant mothers respond to the EPDS survey in a systematically different manner to mothers who have delivered: research on use of the EPDS during the antenatal period tends to identify a higher threshold.²³ 14% of MumsAid's clients were identified as pregnant from an initial survey they complete when beginning

²³ While an EPDS threshold of 10-13 might be appropriate for postnatal depression, a cutoff of 15 corresponds to depression in the antenatal period: L Howard et al., [Non-psychotic mental disorders in the perinatal period](#), *The Lancet*, 384 (9956), 2014. Optimal thresholds may even vary by trimester: Z Kozinszky & R Dudas, [Validation studies of the Edinburgh Postnatal Depression Scale for the antenatal period](#), *Journal of Affective Disorders* 176: 95-105, 2015.

counselling. It is important to check that any different behaviour by this group does not bias the results of the analysis.

However, completing the same analysis excluding pregnant clients gives almost exactly the same profile of results. While the quantified benefits are smaller without pregnant clients, the costs attributable to non-pregnant clients are also proportionally reduced. 47% of clients make a reliable recovery and the breakeven point is 13%, as it is for all clients. This indicates that any distinct behaviour by pregnant clients is not driving the base case results.

Conclusions of sensitivity analysis

The results shown in this section clearly demonstrate that the choices made in the course of this analysis do have some impact on balance of benefits and costs estimated. However, under all scenarios, the conclusion remains largely unchanged: the evidence suggests MumsAid's counselling programme offers clear value for money. In each case, only a small share in the improvement in MumsAid clients' quality of life needs to be attributable to MumsAid counselling for the benefits of the counselling programme to outweigh its costs.

Conclusion

The effects of mothers' poor mental health in the perinatal period can be profound for both mother and child. Recent figures show that up to 10,000 mothers per year may be missing out on the mental health support that they need. The work of charities like MumsAid is more important than ever in ensuring that mothers who would otherwise not receive help are supported with their mental health.

Mothers who go through MumsAid's counselling programme show significant improvements in their mental health. These improvements mean better immediate quality of life for the mother, better bonds between mother and child, and as a result, better long-term emotional, developmental and educational outcomes for the child.

This report quantifies only a narrow portion of these potential improvements: the value associated with a mother's improved quality of life after recovery from depression. In addition, a fairly conservative approach has been taken the quantification of even these narrow benefits. Even so, the results show that MumsAid's work is likely to be delivering value for money. So long as at least one in seven of the MumsAid clients who recovered from depression did so because of counselling, where they wouldn't have otherwise, the programme breaks even.

It is important, nonetheless, not to overstate the certainty which can be attached to these results. The data available does not allow a fully causal attribution of the improvement observed in MumsAid's clients to their participation in the counselling programme. The results of the analysis in this report are thus necessarily cautiously expressed, but nonetheless paint a fairly compelling picture of an important and successful programme.

It is hoped that further work can extend the quantification of the impact of MumsAid's work across more of the benefits outlined above. PBE hopes that continued work with MumsAid will enable a better understanding of the persistence of their impact, and a more confident understanding of how their work helps to improve longer-term outcomes for mothers and their children. To allow a more confident conclusion, MumsAid could strengthen evidence on their work in future by improving the response rate on EPDS surveys, particularly at follow-up sessions (perhaps by

collecting EPDS scores separately from counselling sessions), and by collecting more detailed demographic data on mothers (including age, recent employment history and past experiences of depression).

Annex A – Detailed Methodology

This annex provides additional details about the calculations made to estimate the costs and benefits of MumsAid's counselling programme.

Count reliably recovered clients

This report follows NHS Talking Therapies evaluation in distinguishing recovery, reliable improvement and reliable recovery. Although MumsAid use a different measure of depression, these concepts are still relevant. Clients are identified as having recovered from depression if their pre-counselling score is above the clinically-relevant threshold, and their post-counselling score is below it. Clients are reliably improved if they make a substantial improvement in their scores, regardless of where they are relative to the clinical threshold – in this report, this required improvement is also referred to as the 'minimum change'. To be reliably recovered, a client must be both recovered and reliably improved – that is, their score must have crossed the clinical threshold but also have changed by a substantial amount. While all three statistics are given in the main body of the report, the calculation of benefits is based on reliable recovery.

Data provided by MumsAid includes information on individual clients' counselling start date, measures of wellbeing before and after the twelve counselling sessions, and various other characteristics. In the first instance, these are used to identify clients who recovered from depression during their twelve-session counselling programme.

EPDS scores

One of MumsAid's key measures is the Edinburgh Postnatal Depression Scale (EPDS). The EPDS is a tool which is often employed to screen for postnatal (and antenatal) depression. This tool, comprising ten questions with a scoring range of 0-3 (maximum score 30), is commonly employed to screen for depression in new and pregnant mothers.

Pre-counselling scores generally reflect scores from EPDS surveys taken at the beginning of the first counselling session, although in some exceptional cases counsellors may feel it necessary to immediately address the client's therapeutic needs and complete the survey in the second session. In extreme cases this may dull the difference between pre- and

post-counselling mental health, as measured by the EPDS, but is unlikely to materially change the overall results.

A paired samples t-test comparing pre- and post-counselling EPDS scores for all clients with both scores indicates that the post-counselling scores are statistically significantly lower than pre-counselling scores (Table A1). This suggests a general improvement in mental health of MumsAid clients, likely including those who do not cross the clinical threshold. This is supported by the high share of clients (76%) who make a reliable improvement in their EPDS scores.

Table A1. Statistical test shows that MumsAid clients' EPDS scores are significantly lower after counselling

Means and standard deviations of EPDS scores

	Pre-counselling	Post-counselling	Difference
Mean	16.6	9.4	-7.2
Standard deviation	4.8	3.4	4.2

Note: Paired samples t-test indicates pre-counselling and post-counselling means are significantly different with $p < 0.0001$.

Sources: PBE analysis of data provided by MumsAid.

While commonly used in academic research and by practitioners, there is no general agreement on how high a score indicates a likely clinical level of depression. Levis et al examine the range of thresholds which appear in the academic literature and conclude from a meta-analysis that a threshold of 11 jointly maximises the number of 'true positive' and 'true negative' cases.²⁴ Sensitivity testing in this report shows that this choice of threshold does not greatly alter the conclusions of the analysis.

Almost 20% of MumsAid's clients are missing pre- and/or post-counselling scores; these clients are included in aggregate numbers of clients in MumsAid counselling but do not contribute to recovery figures. There can be a number of reasons a score might be missing: the client may have voluntarily ended their sessions, or it might also be the counsellor's decision to put the time taken up by doing the survey to a different use. It is unfortunate that more of the experiences of MumsAid's clients cannot be reflected in the analysis undertaken in this report.

²⁴ Levis et al (2020).

Client start date

Clients are sorted into financial years (for annual comparison with costs) according to the date they have their first counselling session. For some clients the date reflects their first contact with MumsAid, as opposed to their first session; this may result in some inconsistency in allocating clients across years but will not affect aggregate results. Some data cleaning was necessary in order to disambiguate dates, which may also affect allocation of clients across years but should affect very few clients in the years under examination.

Minimum change

It is natural that any person filling out the same survey on different days may slightly change their answer, even if their general level of mental health has not changed. There are clinical-standard minimum changes associated with many similar tools which are applied in order to recognise a reliable improvement in health.

Investigation did not reveal such a standard which is typically applied to EPDS; nonetheless it is important to make sure that any apparent results are not driven by a bulk of people going from just above to just below a threshold, which could be driven by random variation in answers. In the base case results, the standard deviation of the change in EPDS scores of included clients was used to define the minimum change required for a client to be considered to be recovered from depression (reported in Table A1). Sensitivity testing in this report shows that applying this minimum change does reduce the number of MumsAid clients counted as recovered, but not in a way which materially alters the conclusions of the analysis.

The impact of assumed relapse

Like many mental health conditions, sufferers of depression are prone to 'relapse' – to falling back into depression after they have recovered. Any quantification of benefits must make an allowance for this in MumsAid's clients.

Ideally the indication of relapse would come directly from the experience of the clients themselves. MumsAid offer two follow-up sessions to clients, which are meant to take place three and six months after the end of their first twelve counselling sessions. Not all clients attend a follow-up, and of

those who do, not all have EPDS records, for the reasons outlined above. As a result, response rates to EPDS scores in follow-up sessions are very low, and the sample is too small to rely on for longer-term indications of recovery (or otherwise).

Instead, a relapse rate taken from academic research on depression is applied to the number of MumsAid clients whose EPDS scores suggest they have reliably recovered (as outlined above), to proxy for the number of clients who might be expected to relapse into depression.

Table A2. Estimates of relapse after recovery from depression vary widely

List of literature that evidences relapse rates from depression

Authors	Year	Type of source	Intervention	Estimated relapse rate
American Psychiatric Association	2000	Guidance	Not specific	Up to 60% over a lifetime, after first episode of depression
Vittengl et al.	2007	Meta-analysis of 28 studies	CBT	29% within one year; 54% within two years
Dobson et al.	2008	Single study	CBT	50% within two years
Steinert et al.	2014	Meta-analysis of 11 studies	Psychotherapy (various)	50% within two years
Ali et al.*	2017	Single study	Low-intensity CBT	53% within one year
Lee et al.*	2019	Single study	Low-intensity CBT/Talking Therapy	11% within one year
Smith et al.*	2022	Single study	Low-intensity CBT/Talking Therapy	10% within two years; 14% within three years

Note: Ali et al. & Lee et al. study IAPT/Talking Therapy participants (the latter study is based on a very small sample); the Smith et al. study is on a Norwegian adaptation of IAPT.

Sources: Various - see footnote²⁵

²⁵ American Psychiatric Association (2000) Diagnostic and statistical manual of mental disorders (Fourth ed.), American Psychiatric Association, Washington, DC.

J Vittengl et al., [Reducing relapse and recurrence in unipolar depression: A comparative meta-analysis of cognitive-behavioral therapy's effects](#), Journal of Consulting and Clinical Psychology 75 (3): 475–488, 2007.

KS Dobson et al., [Randomized trial of behavioral activation, cognitive therapy, and antidepressant medication in the prevention of relapse and recurrence in major depression](#), Journal of Consulting and Clinical Psychology 76 (3): 468–477, 2008.

The evidence on relapse following a therapeutic intervention is not expansive, and little evidence is available which reflects relapse from postnatal depression specifically (indeed, some meta-analyses explicitly exclude studies on postpartum depression). A variety of estimates are available on relapse after recovery from depression more broadly, as shown in Table A2. It should be noted that these relapse rates from depression in general may well be different to those from perinatal depression, given the specific nature and causes of PND.

The estimate from the Vittengl et al study is chosen to represent relapse in the base case as it covers a one-year period, matching the core time period for this report, and is based on the results of a relatively large number of academic studies.

However it should be acknowledged that this is a fairly old study, and the more recent Smith et al, on an intervention which is analogous to NHS Talking Therapies and thus somewhat comparable to MumsAid's work, shows much lower relapse rates. Assuming a relapse rate of 11% would indicate a larger number of clients recovered for a full year, more benefits and a lower breakeven point of 11%. On the other hand, Ali et al looked at the lower-intensity form of intervention which would be available through public provision; their estimated relapse rate is much higher at 53%. This would imply a lower number of clients recovered, lower benefits and a much higher breakeven point at 20%. Still, even in this more conservative assumption only 1 in 5 recoveries would have to be attributable for MumsAid for the benefits to outweigh the costs – a finding similar enough to the mainline results not to undermine them.

It is worth noting that, if clients relapse, this would not likely happen immediately after counselling. Removing these clients fully from the count of recovered clients is quite a conservative approach to quantification, as it does not consider the temporary improvement in these clients.

C Steinert et al., [Relapse rates after psychotherapy for depression – stable long-term effects? A meta-analysis](#), Journal of Affective Disorders 168: 107-118, 2014.

S Ali et al., [How durable is the effect of low intensity CBT for depression and anxiety? Remission and relapse in a longitudinal cohort study](#), Behaviour Research and Therapy 94: 1-8, 2017.

M Lee et al., [Durability of Clinical Gains: Do the treatment gains seen in IAPT services last?](#), Oxford Academic Health Science Network, 2019.

O Smith et al., [Long-term outcomes at 24- and 36-month follow-up in the intervention arm of the randomized controlled trial of Prompt Mental Health Care](#), BMC Psychiatry 22: article number 598, 2022.

Calculate benefits of all recoveries

Two key quantifications of the benefits of the improvement in MumsAid's clients' outcomes are considered: the effect of the alleviation from depression in terms of quality of life (as measured by quality-adjusted life years, QALYs) and the monetary equivalent of this.

With one QALY representing one year of life in perfect physical and mental health, a condition which detracts from quality of life can be represented as a subtraction from 1. It follows that the further from 1, the poorer a sufferer's quality of life. For example, a mild depressive disorder is represented as having a much smaller effect on quality of life than a severe depressive disorder.

The WHO publish QALY-equivalent health weights which represent a change in quality of life as a result of a comprehensive list of health states, both physical and mental.²⁶ The weights for depression disorders are given in Table A3. There are three possible weights, with variation according to the severity of the condition. In the baseline analysis of this report it is assumed that MumsAid's clients suffer moderate episodes of depression. As an illustration, the impact of this on the quality of life of a sufferer, as measured by (reduction in) QALYs, is comparable to that from uncontrolled asthma.

Table A3. WHO Health state weights indicate depression substantially diminishes quality of life

Health state weights by strength of major depressive disorder

Health state	Lost QALY, 2019
Major depressive disorder: mild episode	0.145
Major depressive disorder: moderate episode	0.396
Major depressive disorder: severe episode	0.658

Source: WHO, 2020

These health weights can be applied directly to QALYs. QALYs have a maximum value of 1 and minimum value of 0: for example, having an illness with a health weight of 0.25 for a year is equivalent to reducing the amount of time lived in perfect health by a quarter, or down to 9 months. In

²⁶ World Health Organisation (2020).

the case of depression, the improvement in quality of life resulting from a recovery from a moderate depressive condition is worth close to 0.4 QALYs (equivalent to increasing the amount of time lived in perfect health by almost 5 months).

The Treasury 'Green Book' provides a standard valuation of £70,000 in 2020/21 prices for one QALY.²⁷ This valuation is updated to reflect 2023/24 prices using the GDP deflator, also published by Treasury – an increase of approximately 13%.²⁸

For the purposes of translating MumsAid's work into wider measures of benefits it is necessary to discuss depression as though it were an 'on/off' or easily quantifiable experience, when in fact each person's experience is rarely so easy to categorise.

The focus on clients moving from a level which might be considered depressed to below that is a necessarily imperfect exercise. MumsAid's services are not conditional on a client having an EPDS score high enough to be likely considered clinically depressed. The counselling service might also improve the quality of life of those who fall below the threshold when they start counselling (or of those who remain above it even after counselling); these marginal benefits are not included in this quantification. Nonetheless, it is hoped that it will help to demonstrate how valuable MumsAid's intervention might be.

Calculate costs of the programme

Data on the costs of the counselling programme provided by MumsAid cover five financial years, 2019-20 to 2023-24. Salary costs (of those directly and indirectly associated with the programme) make up the vast majority of the total cost of MumsAid's counselling programme (Table A4). The contribution of the programme to MumsAid's core costs is also non-negligible. The remainder of costs attributable to counselling provision are related to marketing the programme, training and other staff and volunteer-related costs. MumsAid's costs are also updated to reflect 2023/24 prices using the GDP deflator.²⁹

²⁷ HM Treasury, [The Green Book \(2022\)](#), last modified 16 May 2024. Accessed 28 September 2024.

²⁸ HM Treasury, [GDP deflators at market prices, and money GDP September 2024 \(Quarterly National Accounts\)](#), last modified 1 October 2024. Accessed 24 October 2024.

²⁹ HM Treasury (2024).

Table A4. MumsAid counselling costs are predominantly direct costs

Summary of MumsAid costs over five years

	2023-24	2022-23	2021-22	2020-21	2019-20
Direct costs	£63,073.27	£54,696.80	£53,410.15	£51,019.00	£52,831.00
Indirect costs	£31,881.54	£20,940.00	£18,334.80	£19,714.00	£20,786.00
Total	£94,954.81	£75,636.80	£71,744.95	£70,733.00	£73,617.00

Sources: PBE analysis of data provided by MumsAid.

While the clients are allocated to the financial year in which they begin counselling, the benefits calculated are assumed to accrue in the year following the end of their counselling sessions. In this sense, the benefits are back-loaded compared to when the costs of the programme are incurred.

Identify breakeven point

With the benefits of the improvements in MumsAid's clients' mental health calculated and costs established, the breakeven point is identified as the ratio between the two. Table A5 shows the full numeric results. The estimated benefits of the clients' recovery average over £600,000 per year, easily outweighing the average cost of the programme at £85,000 per year.

Table A5. The estimated breakeven point has not exceeded 20% over the past five years

Summary of results of analysis over five years

Financial year	Clients recovered	QALYs saved	Value of QALYs saved (£)	Cost of programme provision (£)	Breakeven point (%)
2019-20	26	10.3	811,557	87,681	10.8
2020-21	20	8.0	636,085	79,955	12.6
2021-22	19	7.5	592,217	81,576	13.8
2022-23	14	5.5	438,679	80,279	18.3
2023-24	22	8.6	679,953	94,955	14.0
All 5 years	101	39.9	3,158,492	424,446	13.4

Note: QALYs saved and further quantification of benefits account for assumed relapse. Share of improvement needed indicates share of improvement observed in MumsAid clients which needs to be caused by MumsAid counselling in order for the benefits of the counselling programme to outweigh its costs. Breakeven point shows the ratio between quantified benefits of client recovery and costs of the MumsAid counselling programme.

Sources: PBE analysis of data provided by MumsAid and HM Treasury (2022 & 2024), Vittengl et al. (2007) and WHO (2020).

Sensitivity test – excluding pregnant clients

Table A6 repeats the analysis in Table A5 after excluding pregnant clients from counts of recovered clients and subtracting a proportionate amount of the programme costs. The breakeven points are remarkably similar to those calculated under the base case in Table A5.

Table A6. Even when excluding pregnant clients, the analysis suggests value for money

Summary of results of analysis, excluding pregnant clients

Financial year	Clients recovered	QALYs saved	Value of QALYs saved (£)	Cost of programme provision (£)	Breakeven point (%)
2019-20	24	9.4	745,755	83,004	11.1
2020-21	18	7.2	570,283	70,946	12.4
2021-22	15	6.1	482,547	69,680	14.4
2022-23	12	4.7	372,878	65,343	17.6
2023-24	16	6.4	504,481	70,450	14.0
All 5 years	85	33.8	2,675,945	359,763	13.4

Note: QALYs saved and further quantification of benefits account for assumed relapse. Share of improvement needed indicates share of improvement observed in MumsAid clients which needs to be caused by MumsAid counselling in order for the benefits of the counselling programme to outweigh its costs. Costs are proportionally allocated to pregnant and non-pregnant clients. Breakeven point shows the ratio between quantified benefits of client recovery and costs of the MumsAid counselling programme.

Sources: PBE analysis of data provided by MumsAid and HM Treasury (2022 & 2024), Vittengl et al. (2007) and WHO (2020).

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